User's Manual

SMARTDAC+

SMARTDAC+ STANDARD Hardware Configurator User's Manual

vigilantplant.®

YOKOGAWA
Yokogawa Electric Corporation

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2nd Edition

Introduction

This manual explains how to use SMARTDAC+ STANDARD Hardware Configurator. To ensure correct use, please read this manual thoroughly before beginning operation.

Notes

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Revisions

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End of document

How to Use This Manual

Structure of the Manual

This manual contains the following three chapters.

Chapter	Title and Description
1	**Before Using the Product** Provides an overview of Hardware Configurator. It also explains the PC system requirements, how to start the software, the screen configuration, and the menus.
2	**Creating Setup Data** Explains how to display, create, edit, save, and print setup data as well as how to control the GX/GP using this software.
3	**Troubleshooting** Provides a list of errors and messages.

Scope of This Manual

This manual does not explain the basic operations of your PC's operating system. For this information, read the Windows user's guide or related materials.

Conventions Used in This Manual

Unit

K	Denotes 1024. Example: 768K (file size)
k	Denotes 1000.

Notes

	Improper handling or use can lead to injury to the user or damage to the instrument. This symbol appears on the instrument to indicate that the user must refer to the user's manual for special instructions. The same symbol appears in the corresponding place in the user's manual to identify those instructions. In the manual, the symbol is used in conjunction with the word "WARNING" or "CAUTION."
WARNING	Calls attention to actions or conditions that could cause serious or fatal injury to the user, and precautions that can be taken to prevent such occurrences.
CAUTION	Calls attention to actions or conditions that could cause light injury to the user or cause damage to the instrument or user's data, and precautions that can be taken to prevent such occurrences.
Note	Calls attention to information that is important for the proper operation of the instrument.

Reference Item

▶	Reference to related operation or explanation is indicated after this mark. Example: ▶ section 4.1

Conventions Used in the Procedural Explanations

Bold characters	Indicates character strings that appear on the screen. Example: **Volt**
Procedure	Carry out the procedure according to the step numbers. All procedures are written under the assumption that you are starting operation at the beginning of the procedure, so you may not need to carry out all the steps in a procedure when you are changing the settings.
Explanation	The explanation section describes limitations and related information about the operation.

Images

The images used in this manual may differ from those that actually appear in the software. Such differences do not affect the procedural explanation.

Products That This Manual Covers

Product	Version
GX10, GX20, GP10, and GP20	Up to firmware version R1.02.xx. In the explanations in this manual, these are referred to as the "GX/GP"
SMARTDAC+ STANDARD Hardware Configurator	Up to R.1.02.xx

Revision History

Edition	Explanation
1	New edition
2	Modified for version R1.02.xx. Added descriptions for the GX10, GP10, and GP20. Modified system requirements (support for IE9) and added descriptions for the multilingual display feature. Improvements to descriptions.

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1.1 Overview of Hardware Configurator

1.1.1 Hardware Configurator Features

SMARTDAC+ STANDARD Hardware Configurator is a PC software application for creating setup data for the GX/GP recorder.
You can use it to create, edit, save, and print setup data.
You can also use it to exchange data with a recorder and control a recorder via communication.

Web-based Offline Application

You can use a Web browser (Internet Explorer) on your PC to create and edit setup data. You only need this software and a browser; you do not have to configure communication parameters.

Creating and Editing Setup Data

You can create new setup data by specifying the model and options.
You can also edit existing setup data.

Saving and Loading Setup Data

You can save the data that you create to your PC and load setup files that have been saved on your PC.

Sending and Receiving Setup Data

You can send setup data to and receive data from a recorder via communication.

Printing Setup Data

You can print setup data.

Controlling Recorders

You can start and stop recording or computing on the GX/GP via communication.

Retrieving Information from Recorders

You can retrieve information from the GX/GP via communication.

1.1.2 Installation and Version Updating

Download the latest installer from YOKOGAWA's website to install and update the software. From the Help menu, you can view the software version information and access the link to the website.

Note

- Close all other software applications before installing this software.
- To reinstall the software, uninstall the current software first.
- The “Countries/regions except Japan” selection dialog box appears during installation. Select the country that you will use the software in.
- Standard Hardware Configurator uses HTTP port 34443 to communicate with the Web browser. If this port is already in use by another application, you will not be able to start Hardware Configurator even if you install it.
  Corrective action: ▶ **1.4 Starting and Closing Hardware Configurator**

1.2 PC System Requirements

1.2.1 Hardware

PC

A PC running Windows XP, Windows Vista, or Windows 7

CPU and Main Memory

PC Configuration	OS	Requirements
CPU	Windows XP/Vista/7 (32-bit edition)	Intel Pentium 4, 3 GHz or faster x64 or x86 processor.
	Windows 7 (64-bit edition)	Intel Pentium 4, 3 GHz or faster x64 processor.
Memory	Common	2GB or more.
Hard Disk		Free space of at least 100 MB (depending on the amount of data, you may need more disk space). NTFS recommended.
Mouse		A mouse compatible with the OS.
Display		A display that is compatible with the OS, that has a resolution of 1024×768 or higher, and that can show 65,536 colors (16-bit, high color) or more.
Communication port		Ethernet port compatible with the OS and TCP/IP protocol.
Printer		A printer compatible with your Windows system (a printer driver for the OS is required)

1.2.2 Operating System

OS	Edition
Windows XP	Home Edition SP3 (excluding 64-bit editions)
	Professional SP3 (excluding 64-bit editions)
Windows Vista	Home Premium SP2 (excluding 64-bit editions)
	Business Edition SP2 (excluding 64-bit editions)
Windows 7	Home Premium SP1 (32- or 64-bit edition)
	Professional SP1 (32- or 64-bit edition)

1.2.3 Web Browser

Compatible Browser	Version
Windows Internet Explorer Java Runtime Environment 1.6 (Version 6)	IE6, IE8, and IE9 (Enable HTTP 1.1 and JavaScript.)

Note

- The Web browser that Hardware Configurator uses to display information is limited to Internet Explorer (IE). If IE is not installed on your PC, an error will appear when you start Hardware Configurator.
- IE versions other than the specified versions and other Web browsers are not supported.

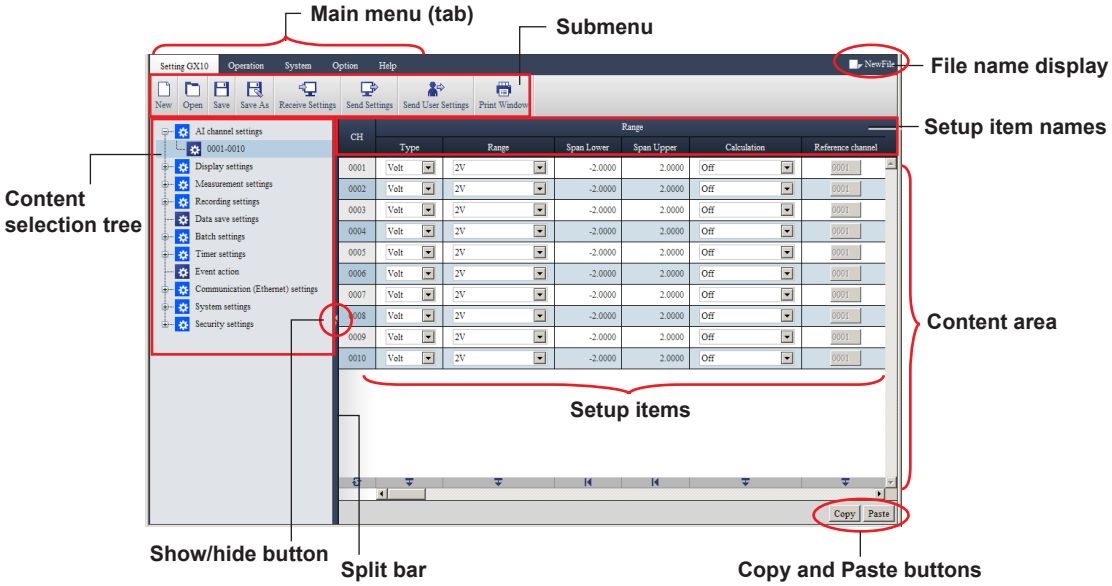
1.2.4 Other Operating Conditions

To view the user's manual of this software, you need to use Adobe Reader 7 or later by Adobe Systems (the latest version is recommended).

1.3 Window and Menus

1.3.1 Window and Menu Configuration

Hardware Configurator's menu consists of the main menu, submenu, and file name display area, as shown below.



Main Menu and Submenu

The main menu is tabular. Click a tab to activate it, and the submenu will switch accordingly. The following table shows the menu items and their descriptions.

Main Menu	Submenu	What You Can Do
Setting	New	Create a new setup data file.
GX10	Open	Load a setup file from a PC.
GX20	Save	Overwrite the file.
GP10	Save As	Save a new file to the PC.
GP20	Receive Settings	Receive the GX/GP setup data.
	Send Settings	Send the current setup data to the GX/GP.
	Send User Settings	Send only the user settings to the GX/GP via communication.
	Print Window	Open a window used to print setup data.
Operation	Start Recording	Start GX/GP recording.
	Stop Recording	Stop GX/GP recording.
	Start Computing	Start GX/GP computing.
	Stop Computing	Stop GX/GP computing.
	Hardware Info.	Receive and display the GX/GP status and option information.
System	System Config.	View and change the system configuration.
	Initialize	Initialize the current setup data.
Option	Display	Specify the display option (language) of Hardware Configurator.
	Port No.	Specify the port number of Hardware Configurator.
Help	Instruction Manual	View the user's manual.*
	Version	View the Hardware Configurator version.
	Web to update	Visit the Website to download the latest version of Hardware Configurator.

* If the language displayed in the browser is English, Japanese, or Chinese, the user's manual in the corresponding language will be displayed. If another language is displayed, the English user's manual will be displayed.

File Name Display

The setup file name is displayed in this area.
A specific file name or “New File” will be displayed.

A specific file name will be displayed under the following conditions.
- When a specific file is loaded and displayed
- When a file is saved using the Save As command

“New File” will be displayed under the following conditions.
- When Hardware Configurator starts
- When you click **New**
- When a connection is established with a recorder and the setup is received

Content Selection Tree

The content selection tree is used to select the items (edit items) you want to edit.
When you click an item in the content selection tree, the items displayed in the content area (right side) change accordingly.

Content Area

The content area displays setup item details.
It displays the settings for the item selected in the content selection tree.
Immediately after Hardware Configurator starts, this area shows channel settings. If there are no channel settings, this area shows display settings.

Split Bar

You can use the split bar to change the window layout.
Drag the split bar to change the panel width of the content selection tree area and content area. Click the show/hide button in the center to show and hide the content selection tree.

Copy and Paste Buttons

The Copy and Paste buttons are used to copy and paste settings when you edit setup items.

1.3.2 Menu Operation and Basic Workflow

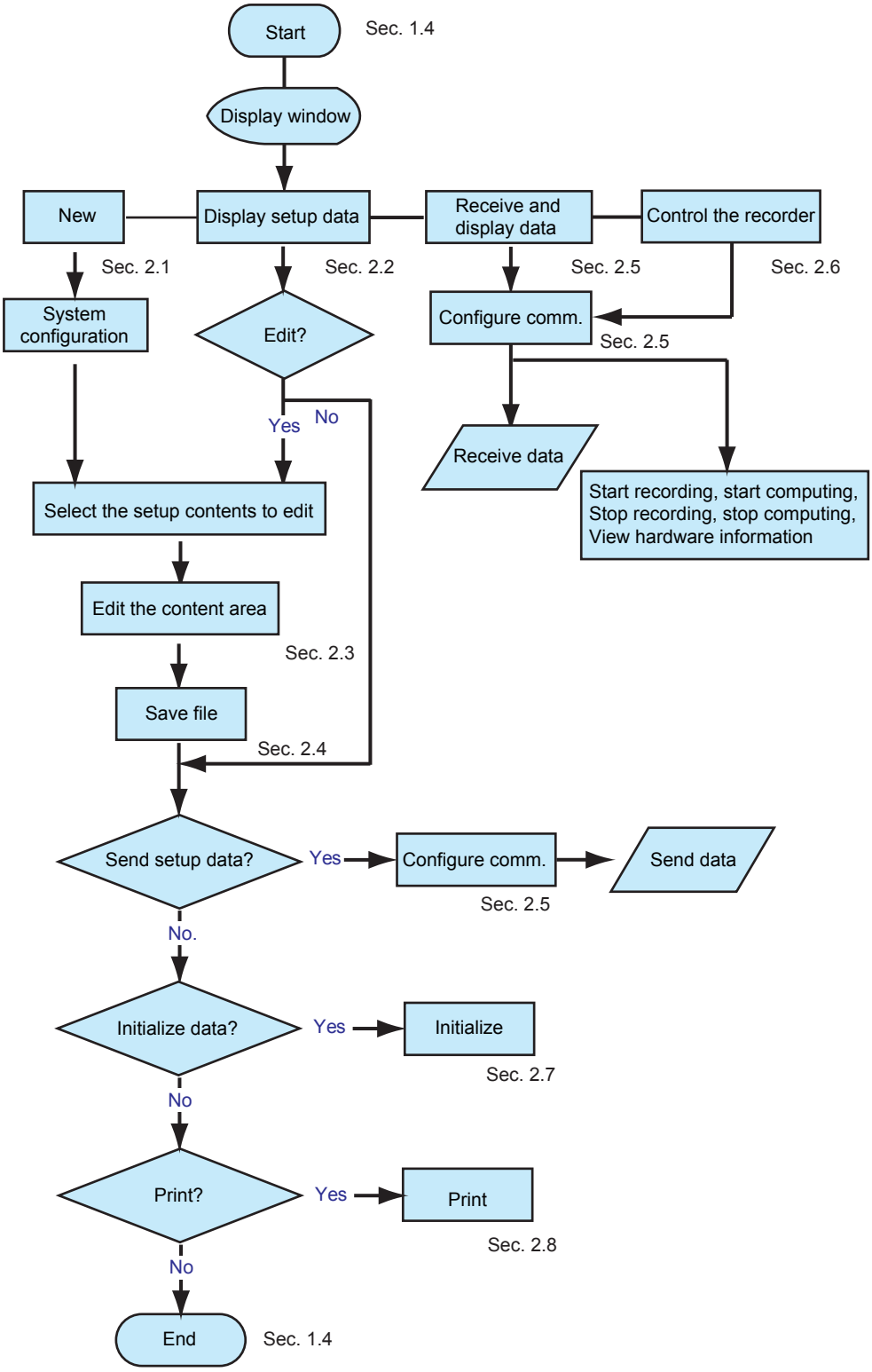
The basic procedure for using Hardware Configurator is shown below.
For more details, see chapter 2, “Creating Setup Data.”

Procedure

1. Start Hardware Configurator.
2. Click a main menu tab (**Setting**, **Operation**, **System**, or **Option**).
3. Select a submenu item (**New**, **Open**, **Start Recording**, **Stop Recording**, etc.).
4. Perform operations in the displayed dialog box.
5. To edit settings, select a title in the content selection tree. Edit the displayed settings.
6. Process the setup data file that you created or edited by selecting appropriate commands (Save, Send Settings, etc.) from the main menu and submenu.
7. Close Hardware Configurator.

1.3.3 Workflow

The features and workflow of Hardware Configurator are illustrated below.



1.4 Starting and Closing Hardware Configurator

1.4.1 Starting the Software

Procedure

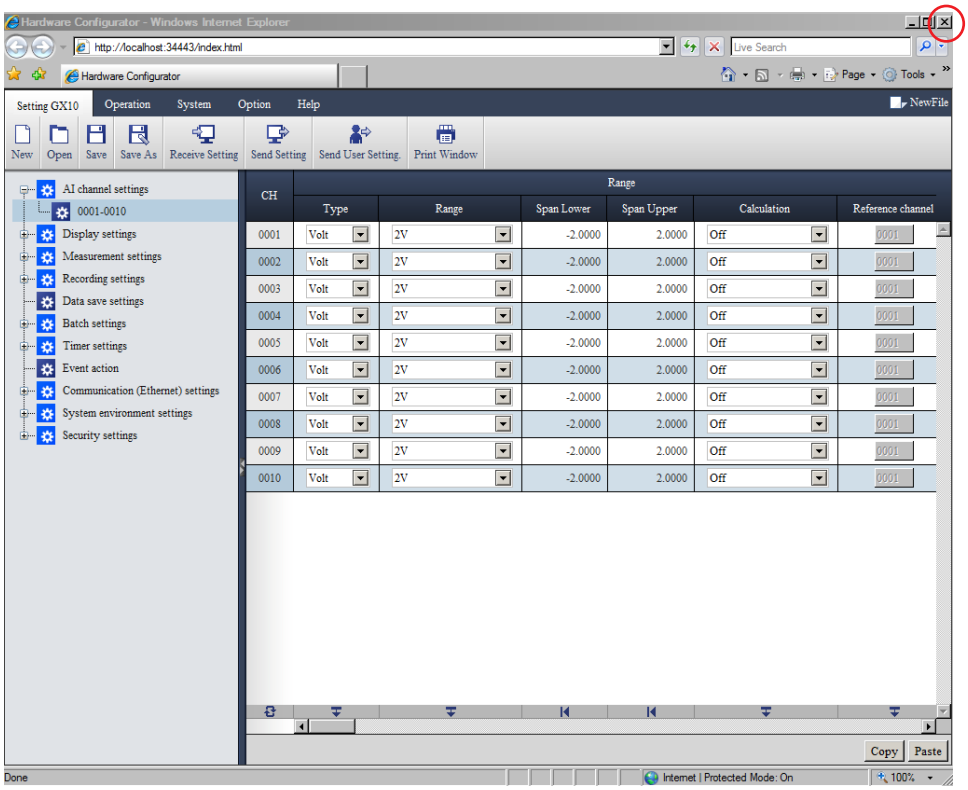
1 From the **Start** menu, select **All Programs** - **SMARTDAC+ STANDARD** - **Hardware Configurator**.

The first time Hardware Configurator starts after installation, the Windows Security Alert dialog box appears (the figure below is the dialog box for Windows XP). Click Unblock.

Windows Security Alert
To help protect your computer, Windows Firewall has blocked some features of this program.
Do you want to keep blocking this program?
Name: Hardware Configurator
Publisher: Yokogawa Electric Corporation
Keep Blocking
Unblock
Ask Me Later
Windows Firewall has blocked this program from accepting connections from the Internet or a network. If you recognize the program or trust the publisher, you can unblock it. When should I unblock a program?

Hardware Configurator starts, and the following window appears.

Close button



Note

- Hardware Configurator will not start if Internet Explorer is not installed.
- The default settings are the system configuration of the GX10.

System Configuration on the First Startup

The table below shows the default system configuration.

Details on system configuration: ▶ **2.1 Creating New Setup Data**

Item	Value
Model	GX10
Version	(The most recent version will be displayed.)
Module	A1 module
Option	No options

If the Default HTTP Port Number Is Already in Use (Port number conflict)

If the default port number (34443) is already in use by other type of communication when Hardware Configurator starts for the first time, it will not be able to start. If this happens, change the port number by following the procedure below.

1. Start Windows Task manager. (Press Ctrl+Alt+Del, and click **Task Manager**. Or, click Ctrl+Shift+Esc.)
2. End the process “ndxserver.exe.”
3. Start the command prompt with system administrator privileges.
4. Move to the software installation directory, and use the following command-line command to change the port number.
   C:\installation directory>ndxserver /portno=xxxxx
   where xxxxx is an unused port number. Specify an unused port number in the range of 34443 to 65535.

Note

To change the port number to a different number after starting the software, follow the procedure in the next section **(1.4.2)**.

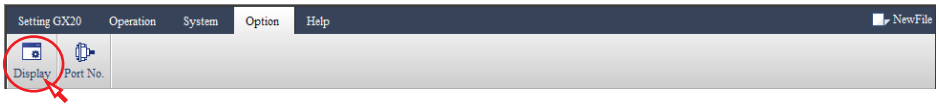
1.4.2 Setting the Display Language and HTTP Port Number

You can set the display language to English, Japanese, German, French, Chinese, Russian or Korean.

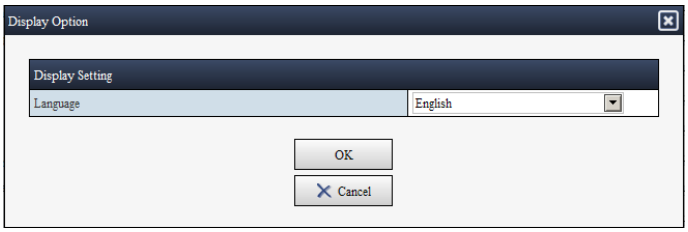
Procedure

1 On the main menu, click the **Option** tab.

2 On the submenu, click **Display**.



The Display Option dialog box appears.



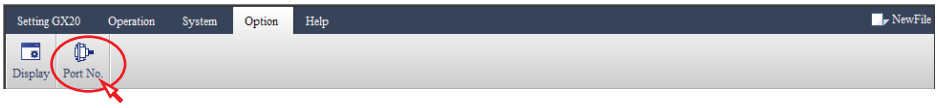
3 Click the Language arrow, and select from the list.

4 Click OK.
The display language changes to the selected language.

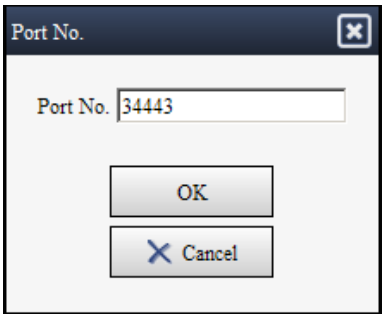
You can specify the HTTP port number for using the Web browser from this software.

Procedure

1. On the main menu, click the **Option** tab.
2. On the submenu, click **Port No**.



The Port No. dialog box appears.



3. Enter the port number (in the range of 34443 to 65535).

Note

To activate the new port number, restart the software.
The software will continue to use the old port number until you restart the software.

1.4.3 Closing the Software

Procedure

1. Close Internet Explorer by clicking the **Close** button or by clicking **Exit** on the **File** menu.

Note

If you change the setup data, the changes are stored and will appear the next time you start the software.

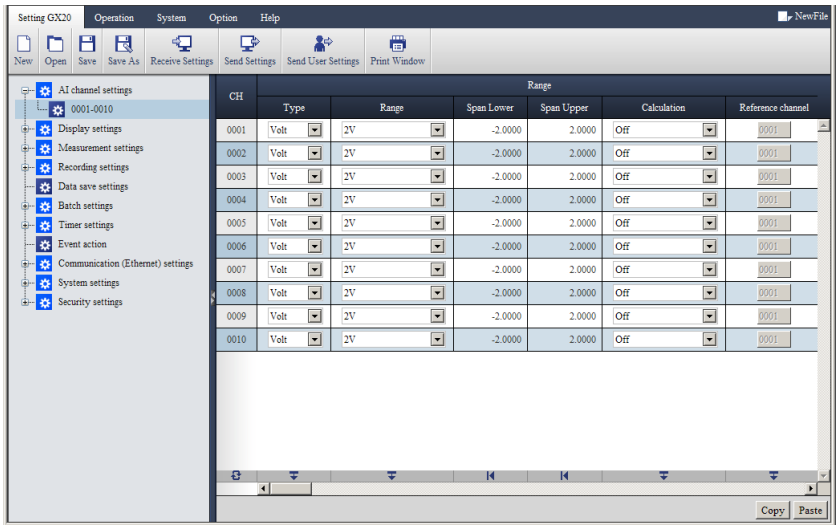
2.1 Creating New Setup Data

2.1.1 Creating a New File

This section explains how to use SMARTDAC+ STANDARD Hardware Configurator to create a new data file for configuring various GX/GP functions.

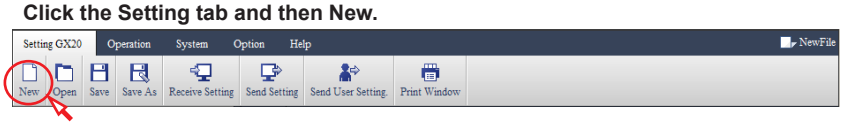
Procedure

1 Start Hardware Configurator.
The setup window appears.

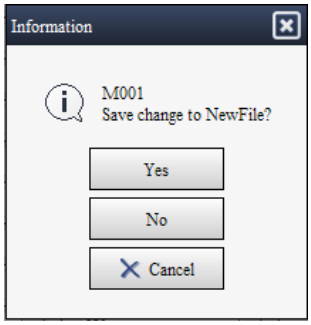


2 On the main menu, click the **Setting** tab and then **New**.

Click the Setting tab and then New.

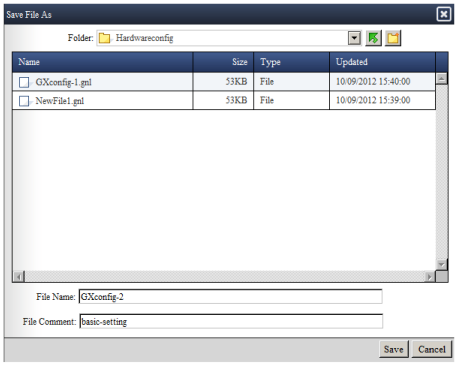


A confirmation message may be displayed that asks whether you want to save the current setup file that is open.



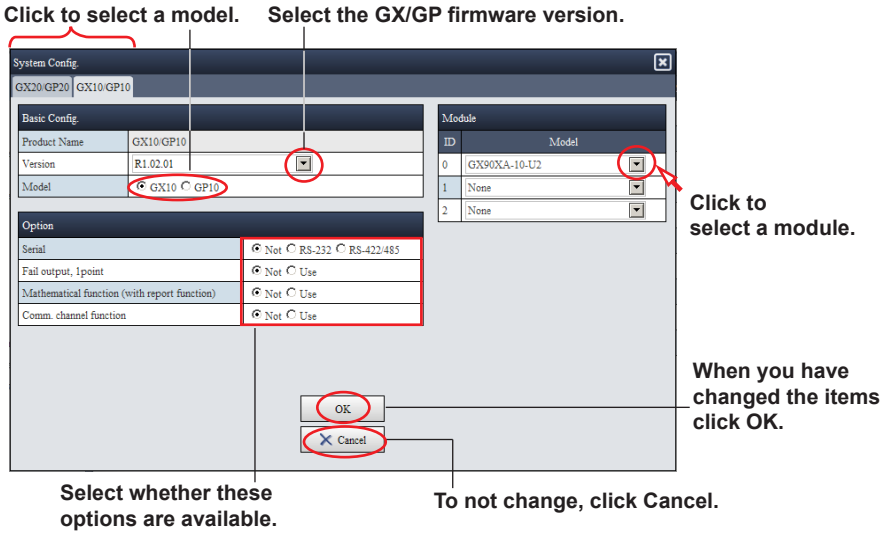
3 To save the file, click **Yes**; otherwise, click **No**.

If you click **Yes**, a dialog box for saving the file (see the figure below) appears.
How to save files: ▶ **2.4 Saving Setup Data**



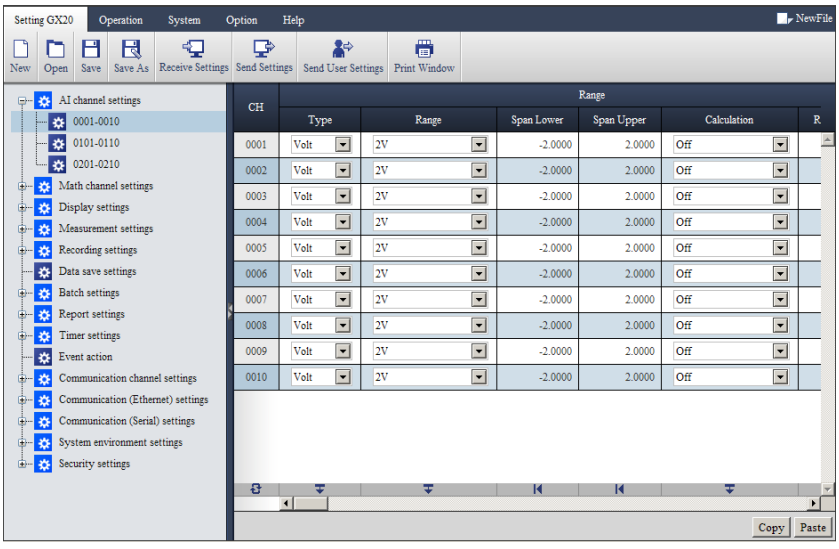
If you select **No**, the System Config. dialog box, shown in step 4, appears.

4 Set the system configuration. Select the GX/GP options and the current module configuration.



5 After you set the items, click **OK**.

The system configuration is loaded, and setup items based on the configuration are created.



6 Edit the setup items in the new window to create the setup data.
How to edit setup items: ▶ **2.3 Editing Setup Data**

Note

If you reconfigure the system configuration, the setup items that you have edited up to that point will be initialized. To save these items, click **Yes** in step 2.

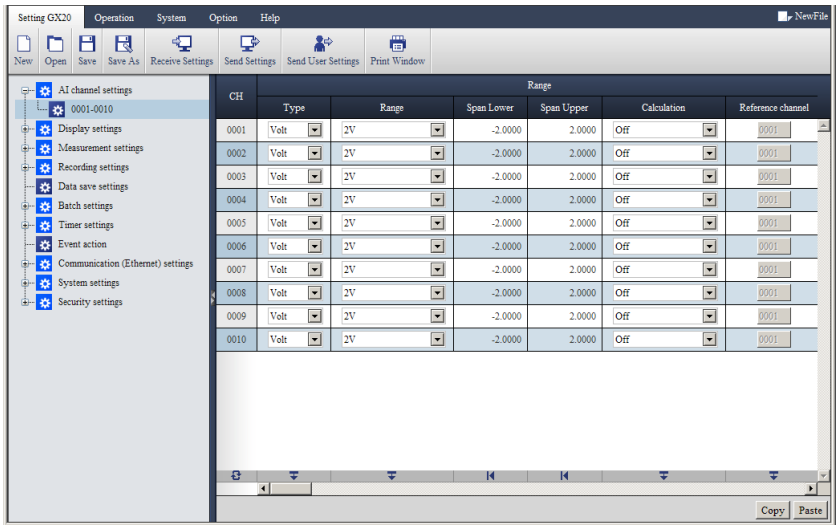
2.2 Displaying Setup Data

2.2.1 Opening a File

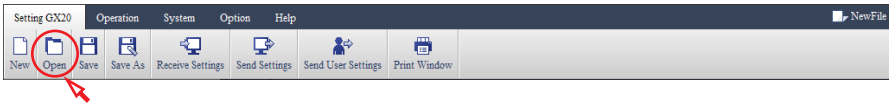
This section explains how to load and display an existing setup data file that has been saved to a PC.

Procedure

1 Start Hardware Configurator.
The setup window appears.

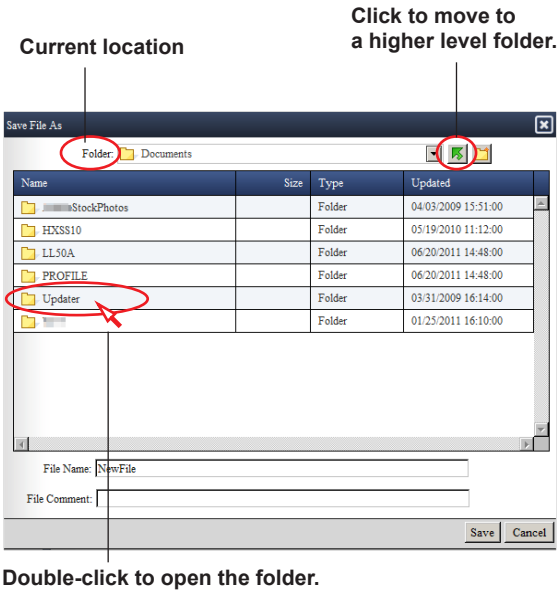


2 On the main menu, click the **Setting** tab and then **Open**.



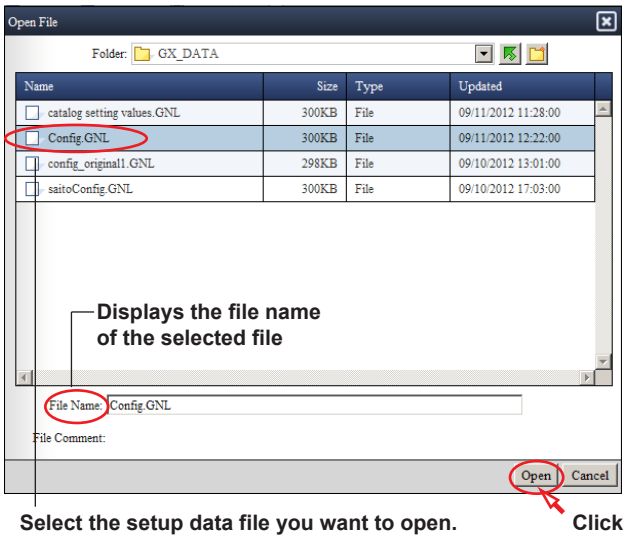
The Open dialog box* appears.

* If there are many files in the folder, it may take some time to display the list.

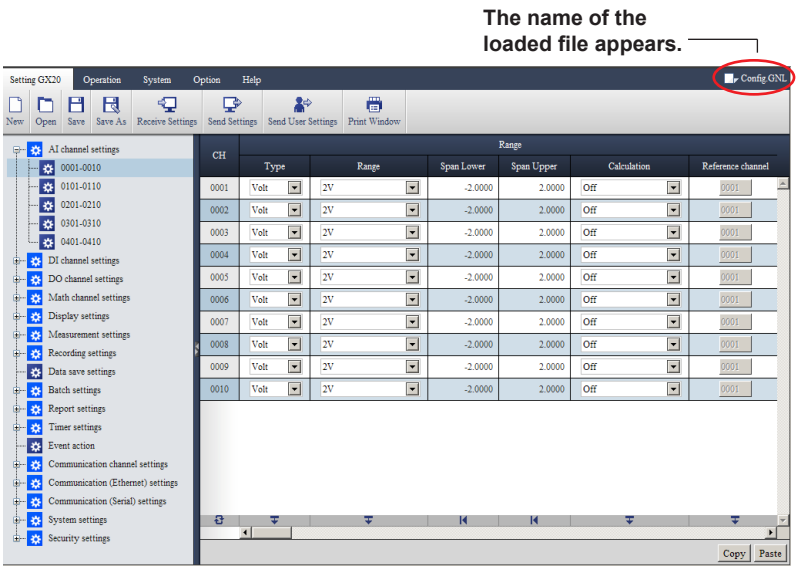


Open the folder containing setup data files.

3 Select the setup data file (.GNL extension) that you want to open,* and click **Open**.



The data is loaded.



Note

The maximum file path length (including the file name) is 256 characters. If this limit is exceeded, an error will occur. Pay attention to the hierarchical depth and file name length.

2.3 Editing Setup Data

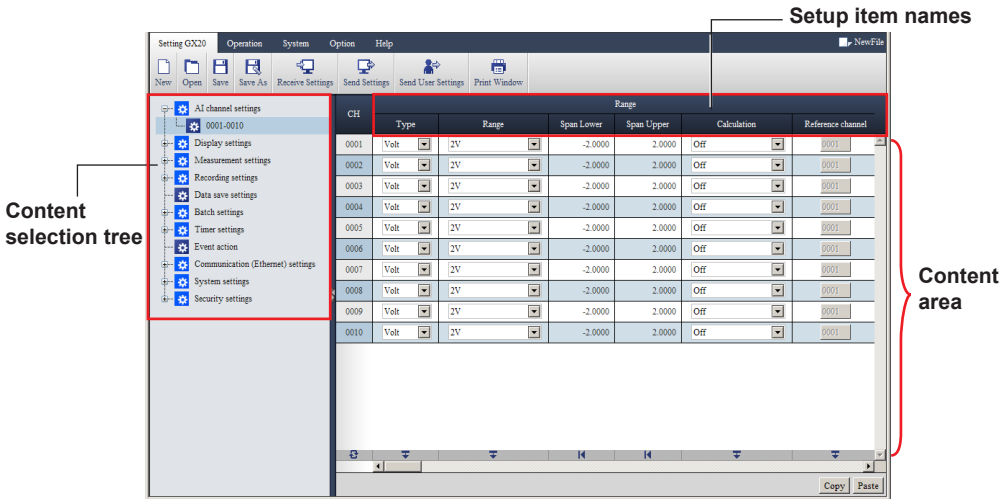
2.3.1 Editing Settings

This section explains how to use Hardware Configurator to edit GX/GP's setup data (.gnl extension).
The setup data editing and display features are the same as those of the Web application on the GX/GP itself.
In addition, the setup items of this software are the same as those on the recorder.
Therefore, this section will only cover typical operations and the unique features of this software.

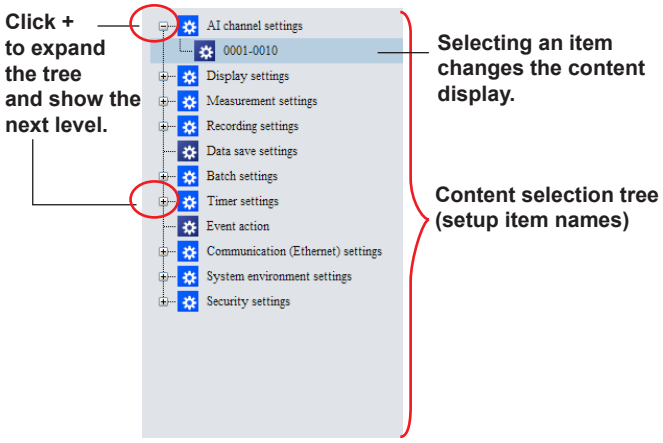
Setup item details: ▶ Section 3.1 in the *Models GX10/GX20/GP10/GP20 Paperless Recorder User's Manual* (IM 04L51B01-01EN).

Procedure

1 Display the file that you want to edit on the **Setting** tab.



2 From the content selection tree, which is on the left side of the window, select the name of the setup item you want to edit. (This example will show how to set DI channels.)



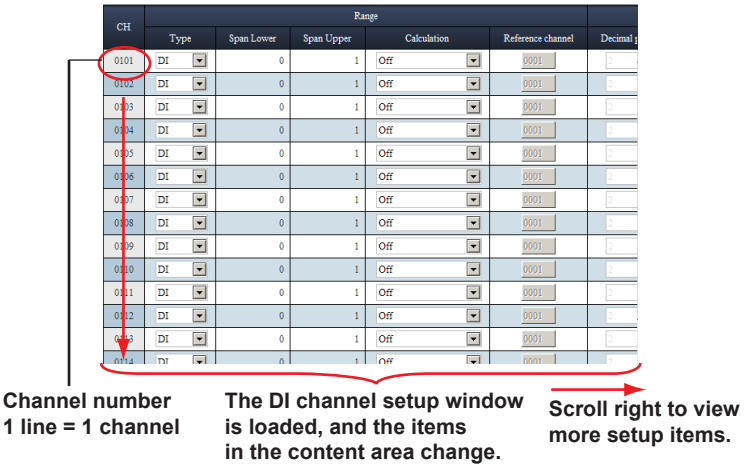
When you select a name, the relevant setup items are loaded in the content area, which is on the right.

Note

Loading takes a certain amount of time, so a "processing" icon may appear. While this icon is displayed, you cannot perform any operations.

3 Edit the channel settings.

Edit the setup items in the content area.



Note

- The changes you make in the content area are retained in the software.
- The software is designed to operate offline, so all items in the content area can be changed.

2.3.2 Editing and Manipulating Values

Input Controls and Dialog Boxes

When you edit settings on this software, input controls and dialog boxes shown in the table below appear for you to select or enter values.

Control Type	Display Example	Setup Procedure
Text box	-2.0000	Enter text or numbers.
Check box	☑	When the check box is selected, the setting is “On” or enabled.
List box	Volt	Click the arrow, and select from the list that appears.
Option buttons	Point Comma	Click to select.

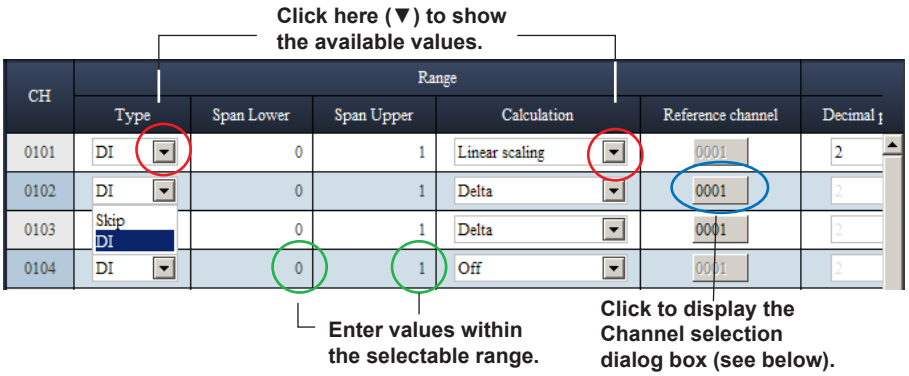
Dialog Box Type	Display Example	Setup Procedure
Channel selection button	Operation 1 Step 1	To configure a specific channel such as an I/O channel, click a channel number to specify the channel you want.
Color selection	Operation 1 Step 2	Click a color on the color selection palette in the dialog box. You can also enter the RGB values to specify any color.
Add channel	Operation 2	When specifying multiple channels such as when editing a display group, click a channel number button to add the channel to the channel configuration. The added channel is displayed as a character string.
Data selection	Operation 3	When specifying the internal switch or other item, click the displayed character string such as the switch number. (Same as channel selection.)
Special dialog box (calibration correction)	Operation 4	A dialog box for editing calibration correction values. Enter the correction value directly.

Examples of representative editing operations that show the above dialog boxes is provided on the next page.

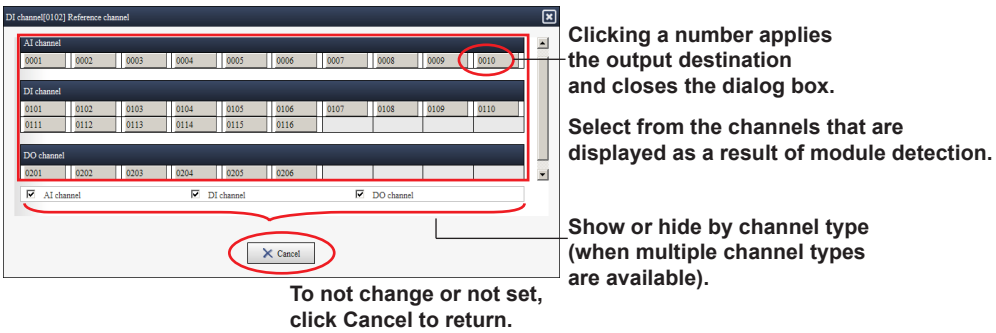
From the content selection tree, select the setup item that you want to edit, and edit the setup items that appear. In general, you can click a channel or data string to edit settings.

Operation 1

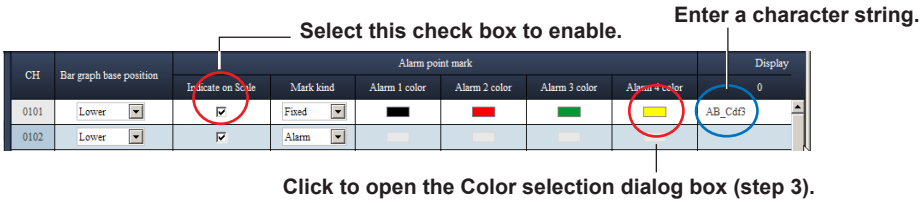
1 Set the channel range.


Click here (▼) to show the available values.
CH
Range
Type
Span Lower
Span Upper
Calculation
Reference channel
Decimal
0101 DI 0 1 Linear scaling 0001 2
0102 DI 0 1 Delta 0001
0103 Skip DI 0 1 Delta 0001
0104 DI 0 1 Off 0001
Enter values within the selectable range.
Click to display the Channel selection dialog box (see below).

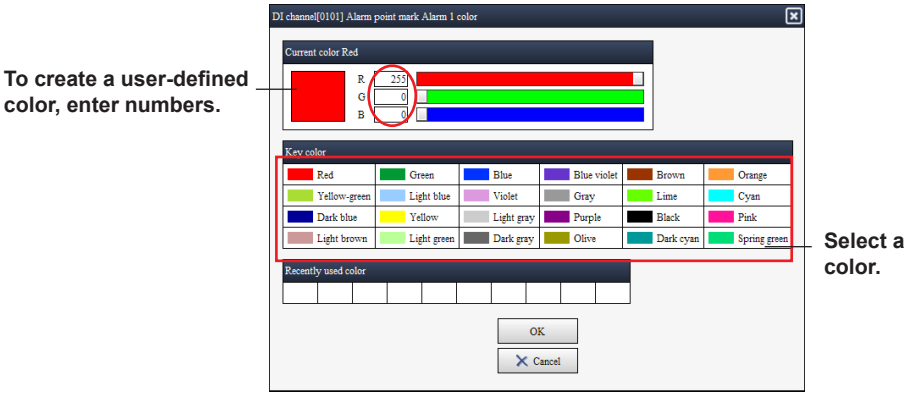
This example shows how to set the reference channel for a difference calculation. Click the channel number under **Reference channel**.
The Channel selection dialog box appears.


DI channel[0102] Reference channel
AI channel
DI channel
DO channel
Cancel
Clicking a number applies the output destination and closes the dialog box.
Select from the channels that are displayed as a result of module detection.
Show or hide by channel type (when multiple channel types are available).
To not change or not set, click Cancel to return.

2 Scroll to the right, and set all necessary items.



3 If you want to change the alarm mark color, click a color.
The color selection dialog box appears.



Operation 2

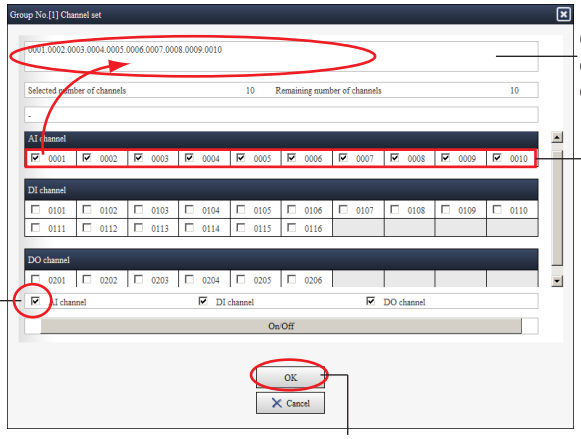
Add channel

This example shows how to assign channels to group 1. On the menu tree, click **Display settings** and then **Group settings**. Under **Channel set**, click the channel number.

Select this check box to enable.

Click to open the Add channel box (see the figure below).

The Add channel dialog box appears.



Channel configuration character String

Select channel number check boxes to add to the group.

Selected channels

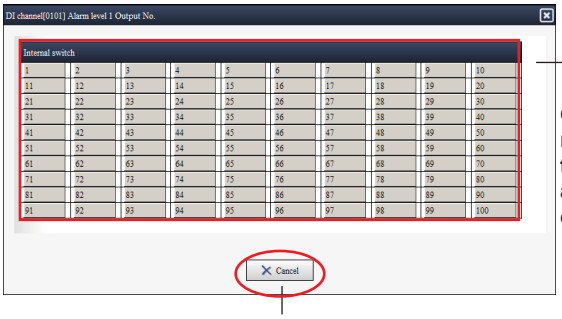
Show or hide channels.

Click OK to apply the settings to the configuration screen.

Operation 3

Data selection

This example shows how to set the alarm output destination. Click a number under **Output No**.
The data selection dialog box appears.



Click a switch number to apply the output destination, and return to the configuration window.

To not change or not set, click Cancel to return.

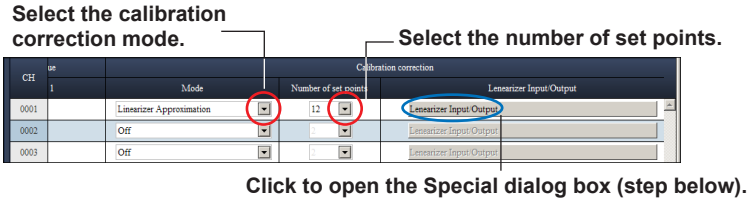
Note

- When the maximum number of selectable channels is reached, you will no longer be able to select additional channels.
- On dialog boxes that show check boxes and option buttons, you can select a range.
  How to select a range: ▶ 2.3.3 Selecting a Range and Copying and Pasting

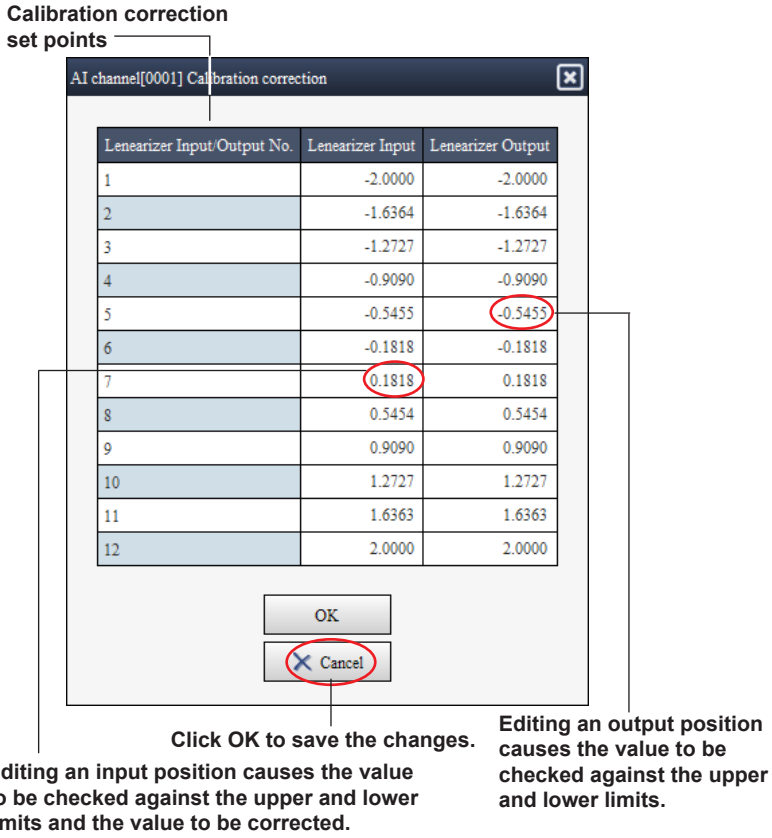
Operation 4

Special Dialog Box for Calibration Correction

This example shows how to edit calibration correction for AI channels. Under **calibration**, click **Linearizer input/output**.



The Calibration correction dialog box appears.


Calibration correction set points
AI channel[0001] Calibration correction
Lenearizer Input/Output No.
Lenearizer Input
Lenearizer Output
1 -2.0000 -2.0000
2 -1.6364 -1.6364
3 -1.2727 -1.2727
4 -0.9090 -0.9090
5 -0.5455 -0.5455
6 -0.1818 -0.1818
7 0.1818 0.1818
8 0.5454 0.5454
9 0.9090 0.9090
10 1.2727 1.2727
11 1.6363 1.6363
12 2.0000 2.0000
OK
Cancel
Click OK to save the changes.
Editing an input position causes the value to be checked against the upper and lower limits and the value to be corrected.
Editing an output position causes the value to be checked against the upper and lower limits.

Note

- If you enter a value in any input position in the Calibration correction dialog box, the value is checked against the upper and lower limits and against the values of other positions and corrected.
  If you enter a value in any output position, the value is only checked against the upper and lower limits. For details on calibration correction, see the *Models GX10/GX20/GP10/GP20 Paperless Recorder User's Manual* (IM 04L51B01-01EN).
- The items and available settings that appear in the configuration window vary depending on the hardware system configuration. If an item that you want to edit does not appear, check the option and module configuration.
  How to set the system configuration: ▶ section 2.1

2.3.3 Selecting a Range and Copying and Pasting

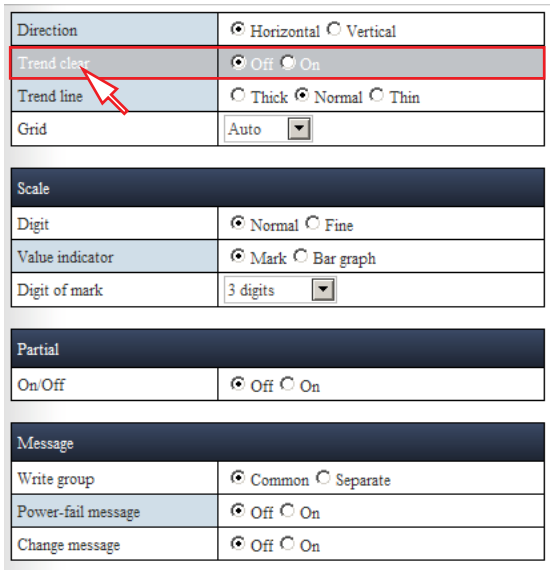
This software enables you to select a range of setup items to edit them, copy them, and paste them.
This section explains how to select a range of items and how to use the Copy, Paste, and Tool buttons.

Selecting a Range

Procedure

1 To select a line, click an item name.

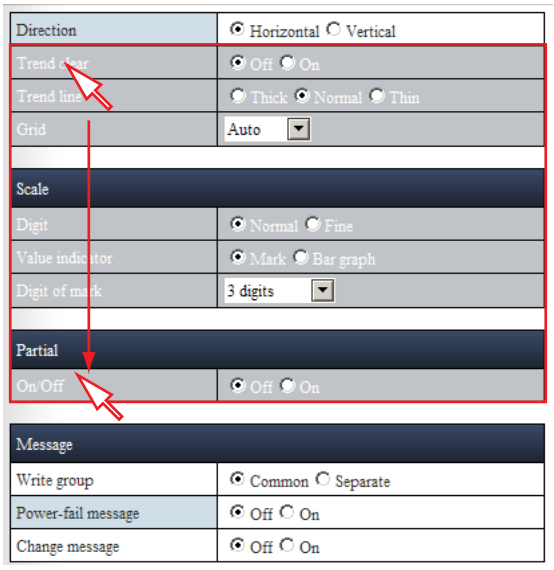
The example below is for **Display settings** - **Trend settings** - **List type**.



Click the line name.

The line is selected.

2 To select multiple lines, drag the cursor and release the mouse at the last line you want to select.



Drag across the line names to select multiple lines.

Multiple lines are selected.

Note

When selecting a range, you cannot select multiple lines one by one. You cannot select columns individually.

Copying the Selected Range and Pasting

Procedure

1 To copy the selected range, click the Copy button, which is located in the lower right of the window. You can also press Ctrl+C on the keyboard.
When the range is copied to the Clipboard, the color of the range changes as shown below.

Direction	Horizontal / Vertical
Trend clear	Off / On
Trend line	Thick / Normal / Thin
Grid	Auto

2 You can paste the contents of the Clipboard to an Excel spreadsheet or a text file. The figure below shows an example in which the contents are copied to cell A1 of an Excel spreadsheet.
When pasting to an Excel spreadsheet, check the format of the cell that you are pasting to.

	A	B	C
1	Trend clear	Off	
2	Trend line	Normal	
3	Grid	Auto	
4	Digit	Normal	
5	Value indicator	Mark	
6	Digit of mark	3 digits	
7	On/Off	Off	
8			

3 The pasted contents can be edit on Excel or a text editor.

	A	B
1	Direction	Horizontal
2	Trend clear	Off
3	Trend line	Normal
4	Grid	Auto

→

	A	B
1	Direction	Vertical
2	Trend clear	On
3	Trend line	Thin
4	Grid	5

Edit the values in the B column in Excel.

4 The edit contents can be pasted back to the setup items. Copy the edit results from the Excel spreadsheet. Copy not just the values but also the item names in row A.

	A	B
1	Direction	Vertical
2	Trend clear	On
3	Trend line	Thin
4	Grid	5
5		

5 Select the paste range in the configuration window. Make the paste range the same as the range of the copied data (the number of lines).

Direction	Horizontal / Vertical
Trend clear	Off / On
Trend line	Thick / Normal / Thin
Grid	Auto

6 Paste the data. Click the **Paste** button, which is located in the lower right of the window. You can also press Ctrl+V on the keyboard.

Direction	Horizontal / Vertical
Trend clear	Off / On
Trend line	Thick / Normal / Thin
Grid	5

The edit results from the Excel spreadsheet is pasted to the configuration window.

Note

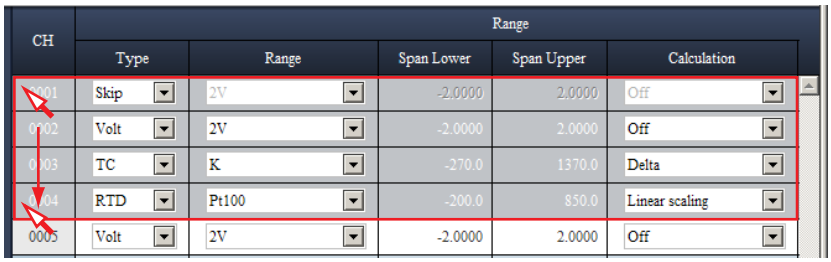
- Depending on the format of the Excel cells that you are pasting to, the values may change when you paste the contents from the Clipboard. For example, if the format is set to **Number**, “0001” will change to “1”. You can prevent pasted values from being automatically corrected by setting **Number** to **Text** in the Format Cells dialog box of the Excel sheet that you want to paste to.
- If the values cannot be pasted as they are to the Excel sheet even with the settings above, we recommend that you use a text editor for copying and pasting.
- If the values that you edit with Excel or a text editor are outside the setting range, when you paste the data back to the configuration window of the software, the values will be corrected in the same way as when you enter values directly.

Selecting a Range of Channels Whose Types Are Different and Copying and Pasting Them

The example below is an AI channel configuration window.

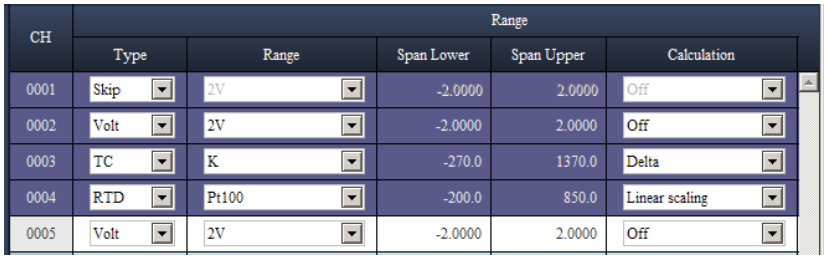
Procedure

1 Select a range of channels as shown below.



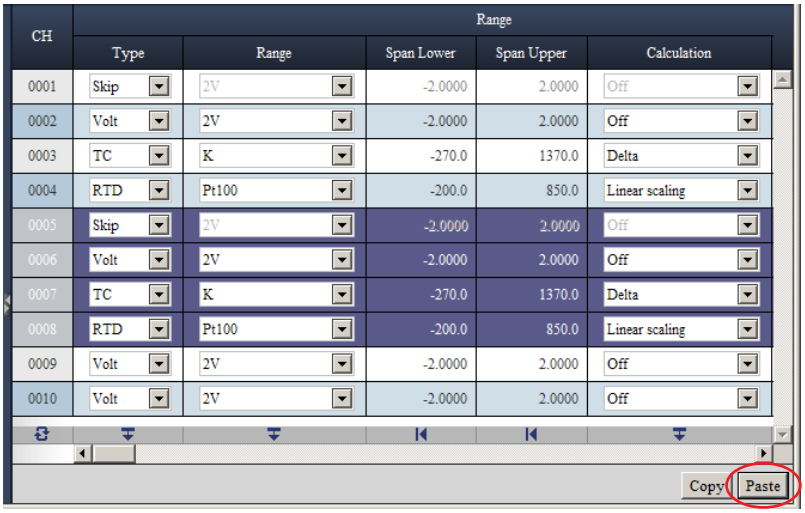
Click the name of the line to select the entire line.
Drag down to select multiple lines.

2 Copy the channel information (lines).



Press Ctrl+C, or click Copy to copy the cells.

3 Paste to different channels.

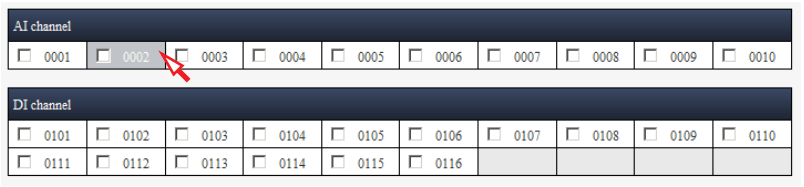


Select the cells to paste to. Press Ctrl+V, or click Paste to paste to the cells.

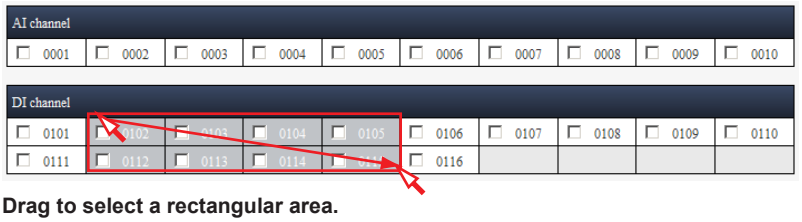
The example below shows the configuration window that appears when you select **Display settings** - **Group settings** - **Channel set**.

Procedure

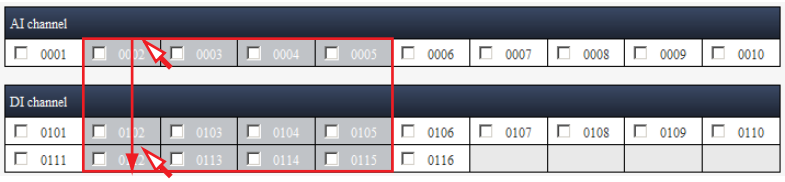
1 Select a range of channels as shown below.



Click a label in a cell to select a single cell.

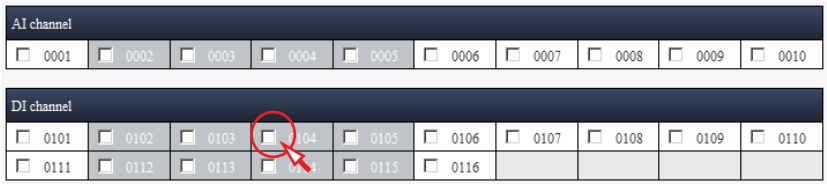


Drag to select a rectangular area.

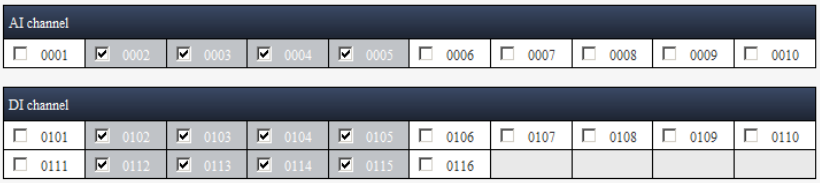


Selection can be made across different setup item blocks.

2 While holding down Ctrl, click any of the check boxes in the selected range, or click the **On/Off** button to select or clear all the check boxes in the selected range.

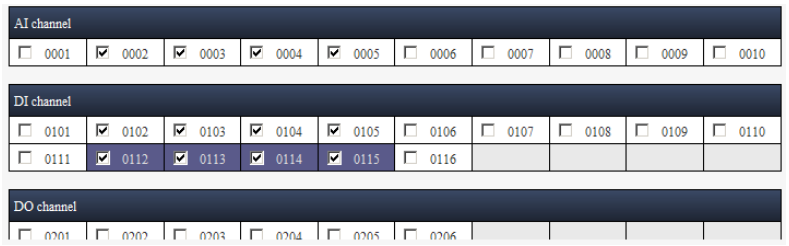


Click while holding down Ctrl, or click On/Off to select the check boxes in the selected range at once.

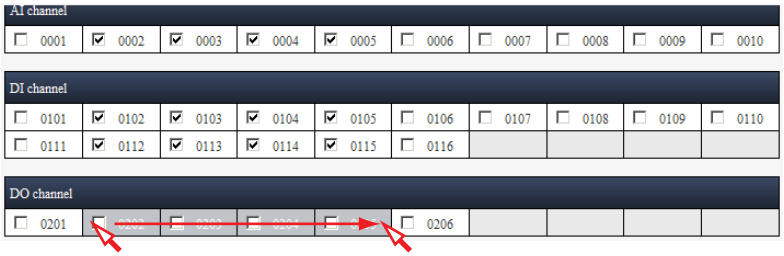


All check boxes in the selected area are selected. Click again to clear all the check boxes.

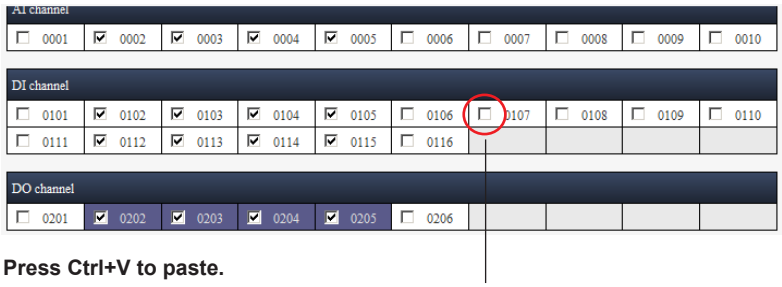
3 The contents in the selected range can be pasted to other cells.



Select the cells to copy from, and press Ctrl+C to copy.



Select the cell to paste to and drag to select a range.



Press Ctrl+V to paste.

When the maximum number of selectable channels is reached, no more check boxes can be selected.

Note

- When you attempt to copy and paste values, Internet Explorer may show the message “Do you want to allow this webpage to access your clipboard?” Click **Allow** access to enable the copy and paste feature of this software. If you click **Don’t allow**, you will not be able to use the copy and paste feature.
- If the cells whose check box is selected (on) reaches the maximum selectable number, cells whose check boxes are unselected become unavailable, and you will not be able to paste to them. You cannot paste to cells that do not have check boxes.
- Pasting is not possible to character strings that cannot be edited or passwords (concealed character strings).
- When option buttons or list boxes are selected, only the selected character strings can be copied and pasted.

Explanation

The configuration windows of this software can be classified into three window types. First is the list type, as in the **Trend settings** window. Second is the table type, as in the **AI channel settings** window. Third is the check box sheet type, as in the **Channel set** window of **Group settings**. The table below shows the differences in how you edit items for each window type.

Window Type	Selectable Range	Selection Method	Selection Cancellation Method	Limitations
List type	• By lines. • Multiple lines across different setup items can be selected.	Click the name of the line to select the entire line. Drag across the names of lines to select multiple lines.	Click a location other than a line name and within the setup item edit area.	Multiple lines cannot be selected one by one. Columns cannot be selected individually.
Table type	• One or multiple lines.	Click the name of the line to select the entire line. Drag across the names of lines to select multiple lines.	Click a location other than the line name.	If you click a cell in a different line, the selection of previously selected cells will be cleared.
Check box sheet type	• By cells. • A rectangular region can be selected.	Click a label in a cell to select a single cell. Drag the cursor diagonally to select a rectangular area. Selection can be made across different setup item blocks.	Click an area within the check sheet without holding the Ctrl key.	• If the cells that are On reaches the maximum selectable number, cells whose check boxes are not selected become unavailable.

Editing Using Tool Buttons

On table type configuration windows, you can use the tool buttons that are shown at the bottom of each table. Each tool button is assigned a function. You can use them to edit items collectively.

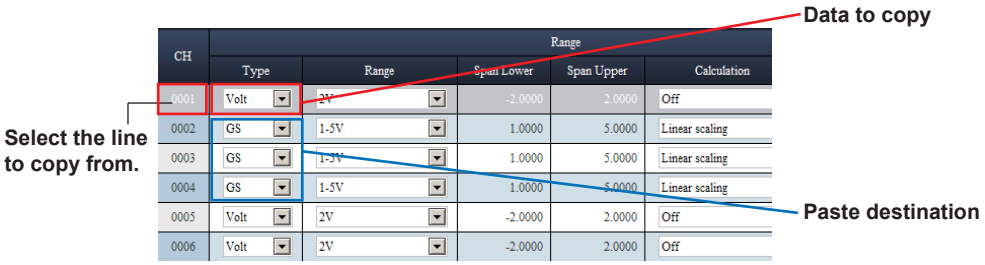
The available types of tool buttons are **Initialize**, **Paste to all lines**, **Increment**, **Minimize/ Maximize**, and **Change all**.

Tool button types and functions: ▶ See the **table on the next page**.

In the operation example below, the **Paste to all tool** button is used to set the **Type** of all selected channels to the same value.

Procedure

1 On the table type configuration window (the AI channel settings configuration window in this example), select the lines that contain the data that you want to copy.
CH0001 is selected.



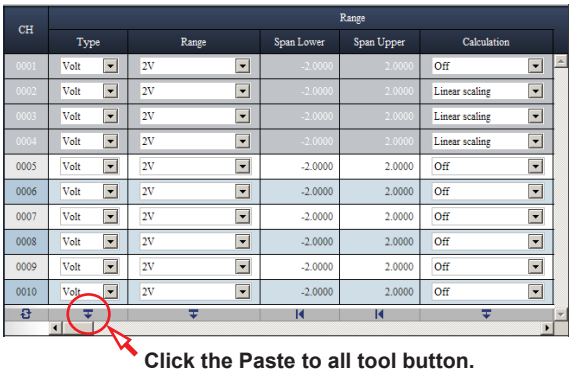
CH	Range				
	Type	Range	Span Lower	Span Upper	Calculation
0001	Volt	2V	-2.0000	2.0000	Off
0002	GS	1-5V	1.0000	5.0000	Linear scaling
0003	GS	1-5V	1.0000	5.0000	Linear scaling
0004	GS	1-5V	1.0000	5.0000	Linear scaling
0005	Volt	2V	-2.0000	2.0000	Off
0006	Volt	2V	-2.0000	2.0000	Off

2 Drag the cursor to the last line that you want to assign the same type.
CH0001 to CH0004 are selected.

CH	Range				
	Type	Range	Span Lower	Span Upper	Calculation
0001	Volt	2V	-2.0000	2.0000	Off
0002	GS	1-5V	1.0000	5.0000	Linear scaling
0003	GS	1-5V	1.0000	5.0000	Linear scaling
0004	GS	1-5V	1.0000	5.0000	Linear scaling
0005	Volt	2V	-2.0000	2.0000	Off
0006	Volt	2V	-2.0000	2.0000	Off

Drag until the last line you want to paste the same data to.

3 Click the **Past to all** button on the tool bar.



CH	Range				
	Type	Range	Span Lower	Span Upper	Calculation
0001	Volt	2V	-2.0000	2.0000	Off
0002	Volt	2V	-2.0000	2.0000	Linear scaling
0003	Volt	2V	-2.0000	2.0000	Linear scaling
0004	Volt	2V	-2.0000	2.0000	Linear scaling
0005	Volt	2V	-2.0000	2.0000	Off
0006	Volt	2V	-2.0000	2.0000	Off
0007	Volt	2V	-2.0000	2.0000	Off
0008	Volt	2V	-2.0000	2.0000	Off
0009	Volt	2V	-2.0000	2.0000	Off
0010	Volt	2V	-2.0000	2.0000	Off

The type of CH0002 to CH0004 is set to **Volt**.

Note

- When you use the tool button to paste data, the values are automatically corrected in the same way as when you enter values directly.
- Tool buttons are unavailable when no cells are selected (except for the **Change all** button).

The table below shows the different tool button types and their functions.

Button	Icon	Function
Past to all		Pastes the value in the first selected line to all other lines.
Increment		• For numeric input Pastes numbers to all selected lines by auto-incrementing the least significant digit, based on the number in the first selected line. • For character string input Pastes the character string of the first line appended with auto-incremented sequence numbers to all selected lines. If the character string of the first selected line ends with a number, this number will be used as the first sequence number. If the character string of the first selected line ends with a character, the sequence number 1 is appended to the character string of the first selected line.
Initialize		Initializes the values of the selected lines to their defaults.
Minimize		Sets the values of the selected lines to their minimum values.
Maximize		Sets the values of the selected lines to their maximum values.
Change all		• For check boxes Switches the check box values of the selected lines at once. If all the check boxes of the selected lines are selected, they are cleared. If they are cleared, they are selected. • For line name columns Selects or unselects all lines in the table.

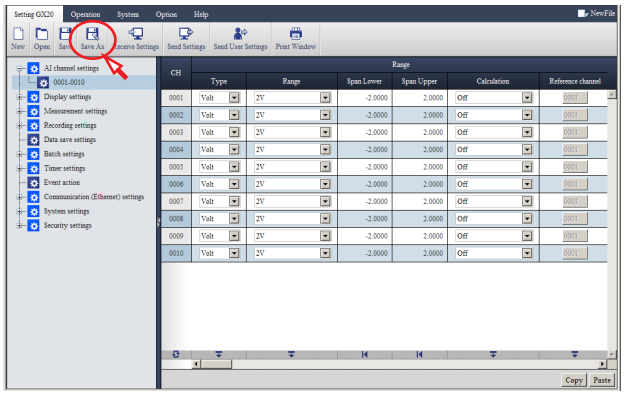
2.4 Saving Setup Data

2.4.1 Saving a Setup Data File

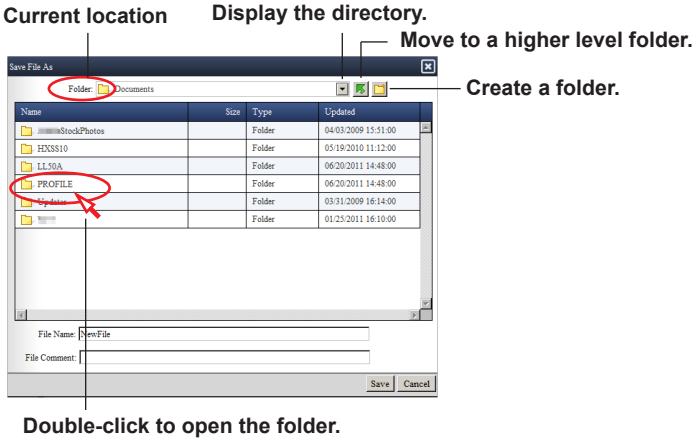
This section explains how to save a setup data file to your PC.

Procedure

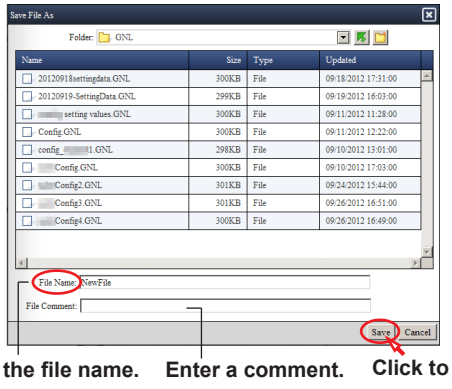
1 On the main menu, click the **Setting** tab and then **Save As**.



The Save As dialog box appears.
The first time you open this dialog box, **Folder** will be set to My Documents. The subsequent times you open the dialog box, **Folder** will show the last location that you opened or save to.



2 Specify the folder to save to, enter the file name, and click **Save**.
If a file with the same name exists in the folder, an overwrite confirmation message will appear. Click **OK** or **Cancel**.



If you click **OK**, the setup data file (.gnl extension) will be saved to the specified folder.

Note

- The maximum file path length (including the file name) is 256 characters. If this limit is exceeded, an error will occur. Pay attention to the hierarchical depth and file name length.
- The following characters cannot be used in file names or folder names.

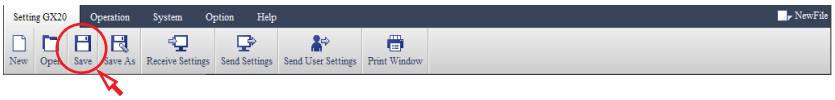
Prohibited characters	Name
/	Slash
> <	Inequality signs
:	Colon
?	Question mark
"	Double quotation
'	Single quotation
\	Backslash
*	Asterisk
|	Pipe
;	Semicolon

- You can enter up to 50 characters for the comment.

Save

On the main menu, click the **Setting** tab and then **Save** to save the edited contents to the current file.
If the file has not been saved yet, clicking **Save** will result in the same operation as clicking **Save As**.

Click the Setting tab and then Save.



2.5 Receiving and Sending Setup Data

You can receive setup data from the GX/GP and send setup data to the GX/GP. You cannot send setup data when the recorder is recording or computing (you can send user settings).

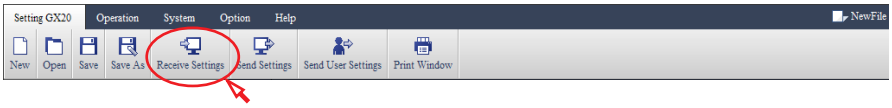
Note

- Before exchanging setup data with a recorder, check the system configuration. If the configuration between the recorder and the software is not the same, settings may not be set properly.
- If on the recorder, Security settings - Basic settings - Communication is set to Login, send data using an administrator user name. Otherwise, a portion of the data such as security settings will not be applied to the recorder.

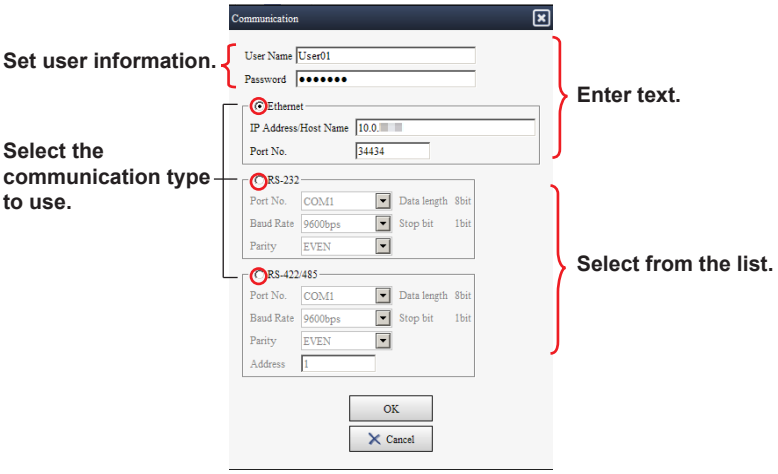
2.5.1 Receiving Setup Data

Procedure

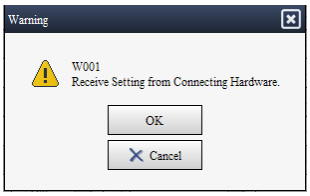
1 On the main menu, click the **Setting** tab and then **Receive Settings**.



A dialog box for entering communication information appears.



2 Enter the information, and click **OK**.
A confirmation message for receiving data appears.



3 To start receiving, click **OK**.
Settings are received from the recorder and displayed. The file name display shows “NewFile.”

Explanation

User Name and Password

Enter the user information to log in to the recorder via communication. The subsequent times, the user name that you entered previously will appear, so you will only need to enter the password.

- You can enter up to 20 characters. If you exceed this limit, the exceeded portion will be cut.
- The characters that you can enter are the alphabet (A to Z, a to z) and numbers (0 to 9).

Ethernet Communication Parameters

IP address and host name that you enter will be stored and will appear the next time you open the dialog box.

- You can enter up to 128 characters. If you exceed this limit, the exceeded portion will be cut.
- The characters that you can enter are the alphabet (A to Z, a to z), numbers (0 to 9), hyphens, and dots.

The port number is the port number of the recorder that you want to connect to. If you have changed the recorder port number, enter that port number.

- Default value: 34434 (selectable range: 1 to 65535)

Serial Communication Parameters

Set the RS-232 and RS-422/485 parameters from the **Port No.**, **Baud rate**, and **Parity** lists. (Enter the RS-422/485 address in the **Address** box.) These values are also stored and will appear the next time you open this dialog box.

Communication	Setup Item	Default Value	Selectable Range
RS-232 **RS-422/485**	Port No.	COM1	COM1to COM9
	Baud rate	9600	9600/19200/38400 /57600/115200 bps
	Parity	EVEN	ODD/EVEN/NONE
RS-422/485	Address	1	1 to 99

Note

- If you change the serial communication COM port number from Windows Device Manager, restart the PC. Otherwise, the new setting may not take effect.
- The serial communication parameters in this software are fixed at 8-bit data lengths and 1-bit stop bit.

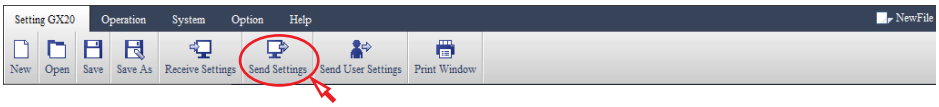
2.5.2 Sending Setup Data

You can send the current setup data to the GX/GP. This is not possible if the recorder is recording.

How to change security settings and send data: ▶ **2.5.4 Changing the GX/GP's Security Settings**

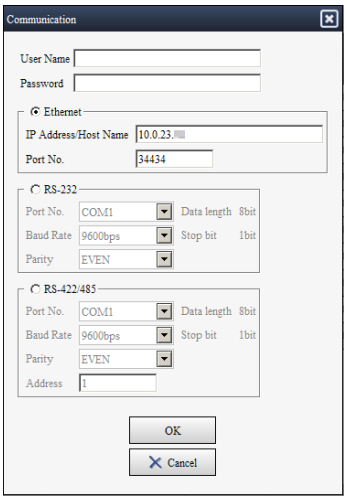
Procedure

1 On the main menu, click the **Setting** tab and then **Send Settings**.



A dialog box for entering communication information appears.

2 Enter the information, and click **OK**.



A confirmation message for sending data appears.

3 To start sending, click **OK**.
The setup data will be sent.

Note

If you change the GX/GP's **Security settings** - **Basic settings** - **Communication** from **Off** to **Login** and send setup data, be sure to follow the procedure in **"Changing the GX/GP Communication Login Function from Off to Login" of section 2.5.4**.

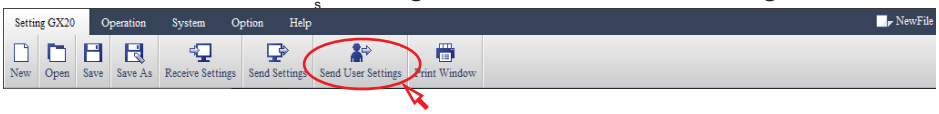
2.5.3 Sending User Settings

You can send only the user settings to the GX/GP via communication. You can perform this operation even when the recorder is recording or computing.

Details on user settings: ▶ Section 1.9 in the *Models GX10/GX20/GP10/GP20 Paperless Recorder User's Manual* (IM 04L51B01-01EN).

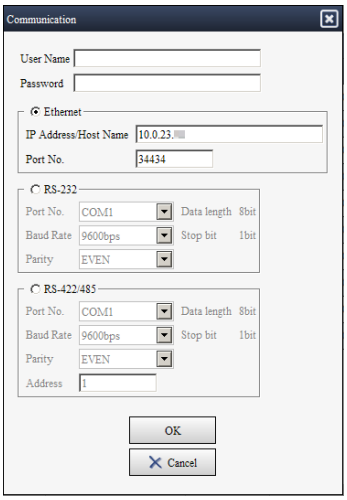
Procedure

1 On the main menu, click the **Setting** tab and then **Send User Settings**.



A dialog box for entering communication information appears.

2 Enter the information, and click **OK**.



A confirmation message for sending data appears.

3 To start sending, click **OK**.
The setup data will be sent.

Note

If you are logged in and you change the user information and send it to the GX/GP, errors will occur when you send subsequent setup commands. To change your user information in the GX/GP from the software via communication, be sure to follow the procedure in **"Changing User Information in the GX/GP via Communication"** of **section 2.5.4**.

2.5.4 Changing the GX/GP's Security Settings

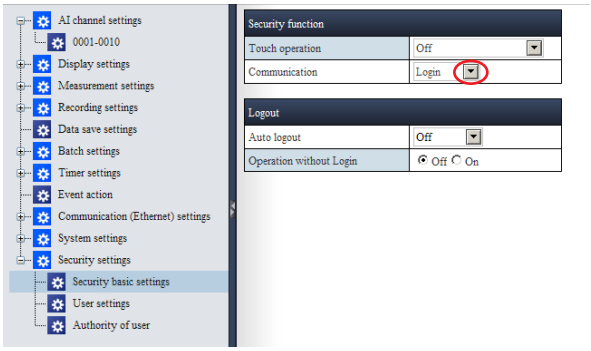
Changing the GX/GP Communication Login Function from Off to Login

The procedure below is for enabling the GX/GP communication login function from Hardware Configurator. Follow the procedure below to change the GX/GP's **Security settings** - **Basic settings** - **Communication** from **Off** to **Login** from the software via communication.

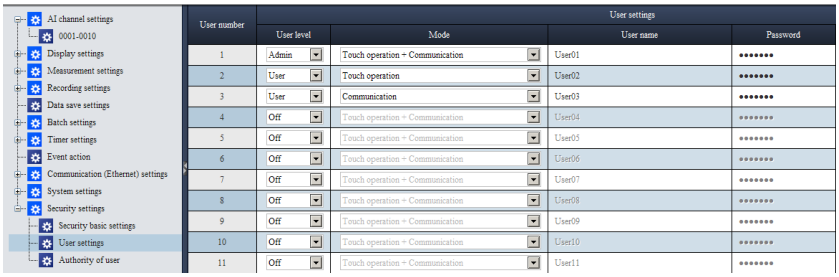
To change the GX/GP communication login function from **Login** to **Off**: ▶ 2.5.2 Sending Setup Data

Procedure

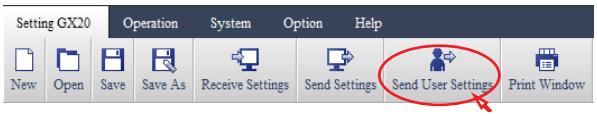
1 From the content selection tree, select **Security settings** - **Security basic settings**, and set **Communication** under **Security function** to **Login**.



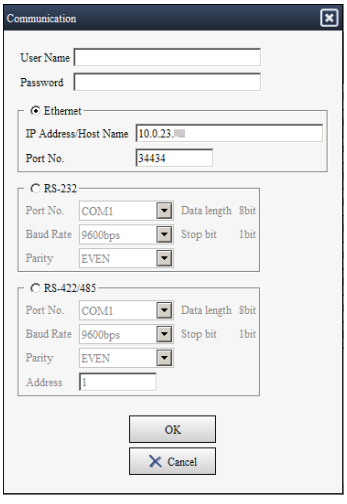
2 From the contents selection tree, select **Security settings** - **User settings**, and register a user.



3 On the Submenu, click **Send User Settings** to send the user information.

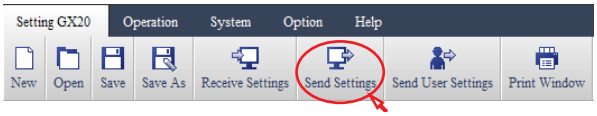


A dialog box for entering communication information appears.



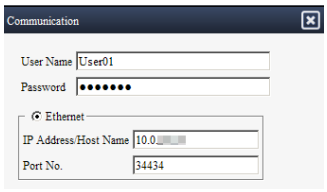
Confirm the information, then click **OK**.

4 On the Submenu, click **Send Settings**.



5 A dialog box for entering communication information appears. From the user settings sent in step 3, enter the **User Name** and **Password** for the **Admin** user level.

User Name and Password for the Admin user level



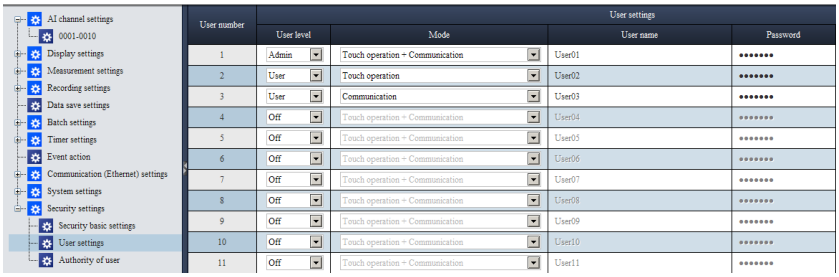
6 Click **OK** to send the settings.
The setup data will be sent.

Changing User Information in the GX/GP via Communication

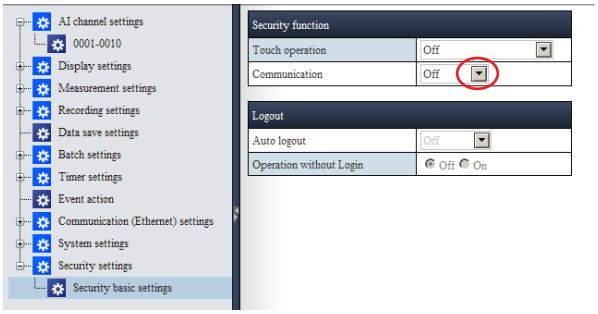
Follow the procedure below to change the user information of a logged-in user from this software.

How to change the user information of other users (excluding your own): ▶ **2.5.2 Sending Setup Data, or 2.5.3 Sending User Settings**

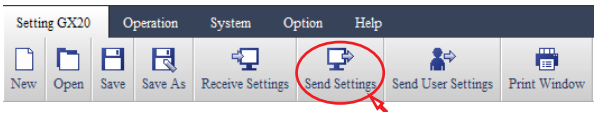
1 From the contents selection tree, select **Security settings** - **User settings**, and then change the user registration information, such as the user name and password.



2 From the content selection tree, select **Security settings** - **Security basic settings**, and set **Communication** under **Security function** to **Off**.

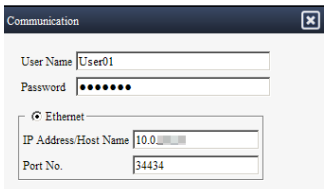


3 For this step, use the user name and password for the Admin user level that were valid before you edited them in step 1.
Click **Send Settings**.



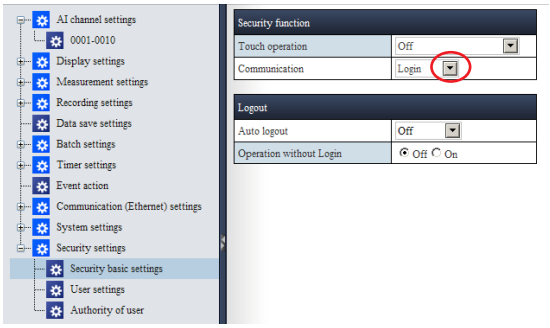
Enter the old Admin user level information.

User Name and Password for the old Admin user level



The GX/GP's **Security settings** - **Basic settings** - **Communication** is set to **Off**. At the same time, the user information edited in step 1 is set in the GX/GP.

4 From the content selection tree, select **Security settings** - **Security basic settings**, and change **Communication** under **Security function** to **Login**.



5 Enter the user name and password for the Admin user level that you edited in step 1, and click **Send Settings** on the **Submenu** again.

The GX/GP's **Security settings** - **Basic settings** - **Communication** returns to Login.
This completes the updating of the user information.

2.6 Controlling the Recorder

You can use this software to start and stop the recorder's recording and computing function and display the recorder's hardware information.

* Computation is an option.

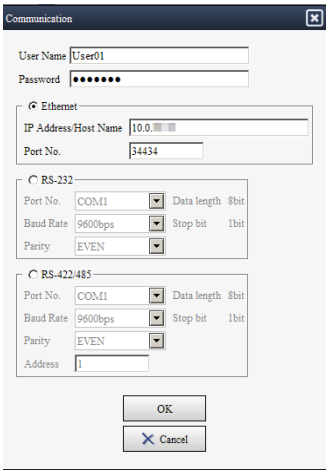
2.6.1 Starting and Stopping Recording and Computing

Procedure

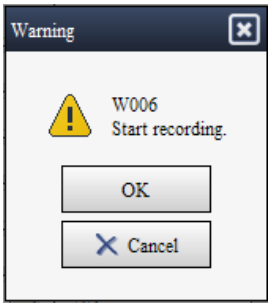
1 On the main menu, click the **Operation** tab and then **Start Recording**, **Stop Recording**, **Start Computing**, or **Stop Computing** on the submenu.

A dialog box for entering communication information appears.

When you select a command on the **Operation** tab of the main menu, a dialog box for setting communication parameters first appears. For details on the settings of the **Communication** dialog box, see the procedure in section **2.5.1 Receiving Setup Data.**



2 Enter the information, and click **OK**.
A confirmation message for starting or stopping appears.



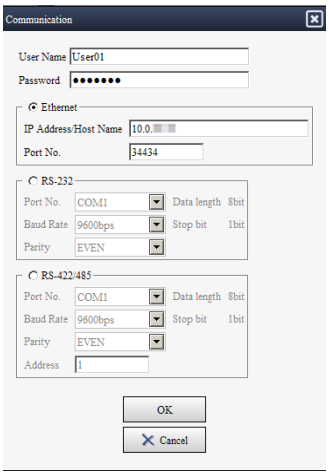
3 To execute the operation, click **OK**.
The recorder will start or stop recording or computing.

2.6.2 Viewing the Recorder Hardware Information

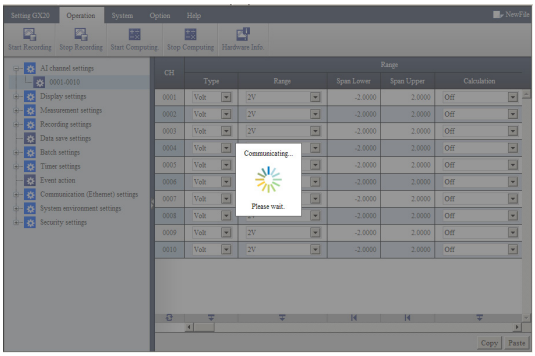
Procedure

1 On the main menu, click the **Operation** tab and then **Hardware Info**.

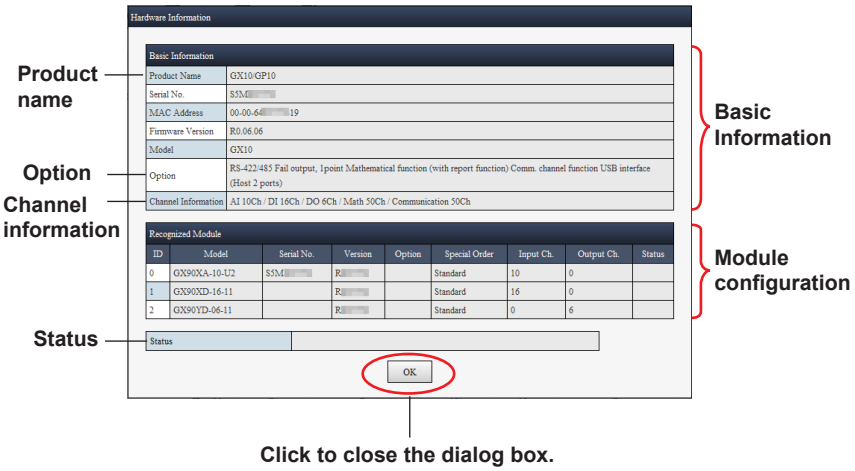
A dialog box for entering communication information appears.



2 Enter the information, and click **OK**.
Communication with the recorder starts.



The Hardware Information dialog box appears.


Hardware Information
Basic Information
Product Name GX10/GP10
Serial No. 55M
MAC Address 00-00-64 19
Firmware Version R0.06.06
Model GX10
Option RS-422/485 Fail output, 1point Mathematical function (with report function) Comm. channel function USB interface (Host 2 ports)
Channel Information AI 10Ch / DI 16Ch / DO 6Ch / Math 50Ch / Communication 50Ch
Recognized Module
ID Model Serial No. Version Option Special Order Input Ch. Output Ch. Status
0 GX90XA-10-U2 55M R Standard 10 0
1 GX90XD-16-11 R Standard 16 0
2 GX90YD-06-11 R Standard 0 6
Status
OK
Product name
Option
Channel information
Status
Basic Information
Module configuration
Click to close the dialog box.

Explanation

The Hardware Information dialog box shows the following information.

Basic Information

- Product name: “GX20/GP20” or “GX10/GP10”
- Serial No.
- MAC address
- Firmware version
- Model: GX10, GX20, GP10, or GP20
- Option
  The options detected by the recorder are listed in order.

Option		Displayed Characters
Serial communication interface	/C2	RS-232
	/C3	RS-422/485
VGA output	/D5	VGA output
Fail output	/FL	Fail output, 1point
Mathematical function with report function	/MT	Mathematical function (with report function)
Communication channel functions	/MC	Communication channel function
24 V DC/AC power supply	/P1	24VDC/AC power supply
USB interface (Host 2 ports)	/UH	USB interface (Host 2 ports)
Pre-installed modules	/Uxx0	Model pre-installed with analog (universal) input module
	/CRxx	Model pre-installed with digital output module(s) and/or digital input module(s)

- Channel information
  Displays the number of AI, DI, DO, math, and communication channels.

Module Configuration

- ID
  GX20, GP20: 0 to 9
  GX10, GX20: 0 to 2
- Model
- Serial No.
- Version
  Module firmware version
- Option
- Custom
  Customization information. “Standard” for no customization.
- Input Ch.
  Number of input channels
- Output Ch.
  Number of output channels
- Status
  Recorder output status

Status

- Recording: The recorder is recording.
- Computing: The recorder is computing.
- Accessing Media: The recorder is accessing a storage medium.

2.7 Initializing Setup Data

If you change the setup data on this software, the changes are stored and will appear the next time you start the software. If you want to view or change the current system configuration, follow the procedure in section 2.7.1. If you change the system configuration, the current setup data will be initialized. If you do not want to change the current system configuration but want to just initialize the settings, follow the procedure in section 2.7.2.

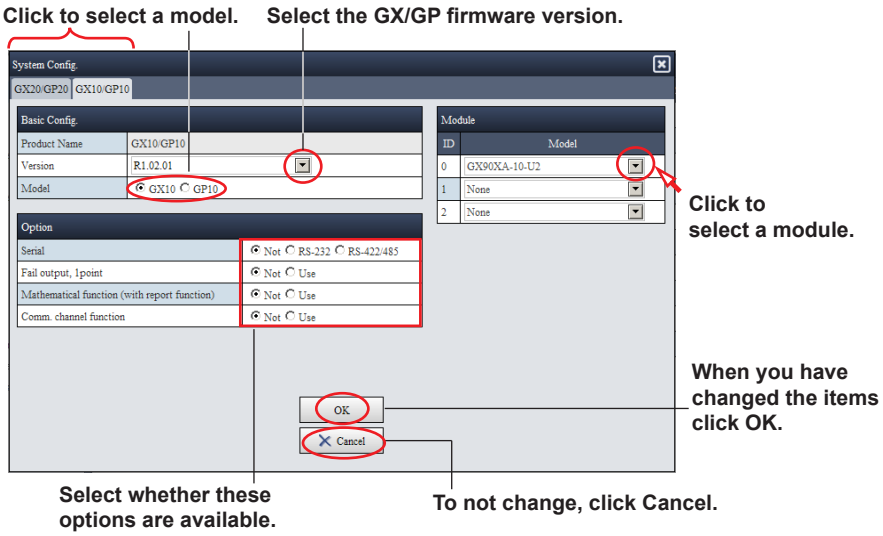
2.7.1 Viewing and Changing the System Configuration

Procedure

1. On the main menu, click the **System** tab and then **System Config.**

The System Config. dialog box appears, showing the current system configuration.

2. If you just want to view the system configuration and not change it, click **Cancel**. To change it, select the option or module that you want to change.



3. After you set the items, click the **OK**.
The system is reconfigured, and the setup items for the new system configuration will appear.

2.7.2 Initializing Setup Data

Procedure

1. On the main menu, click the **System** tab and then **Initialize**.

The initialization confirmation dialog box appears.

2. Click **OK** to initialize.
The settings are initialized to their defaults, which are the settings used for new setup data.

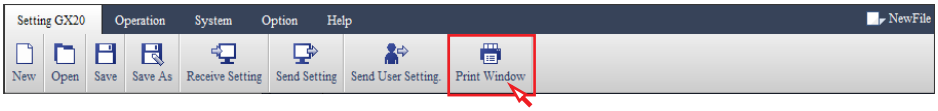
2.8 Printing Setup Data

You can display the current system configuration data and setup data in a separate window and print them. You can select what items to print.

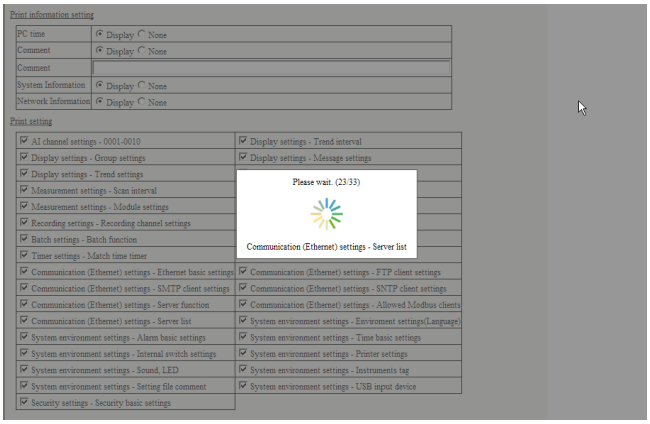
2.8.1 Setting the Print Options

Procedure

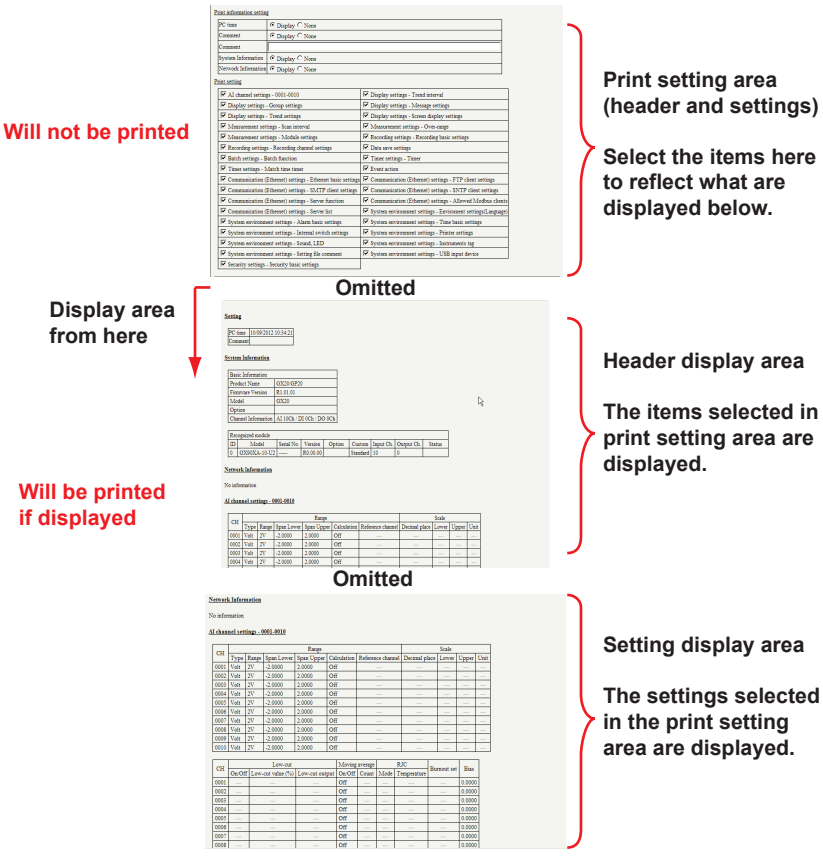
1 On the main menu, click the **Setting** tab and then **Print Window**.



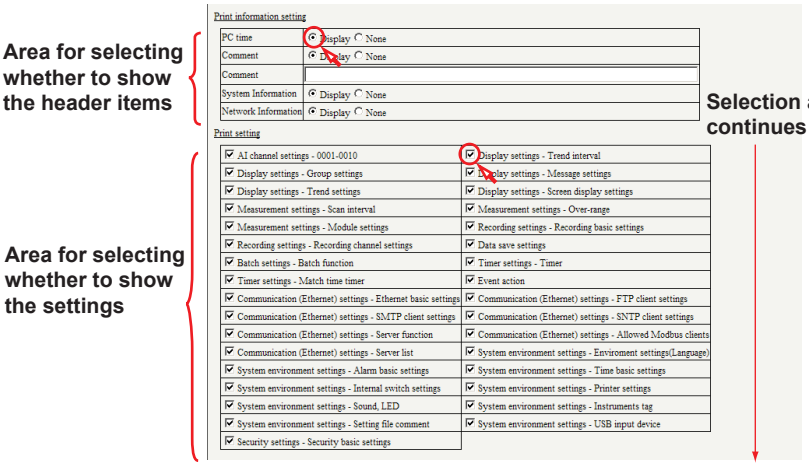
A separate window opens, and data loading starts.



The print window appears. The window is divided into the print setting area (top half) and display area (bottom half).

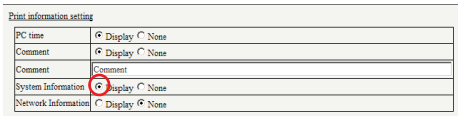

Will not be printed
Print setting area (header and settings)
Select the items here to reflect what are displayed below.
Omitted
Display area from here
Header display area
The items selected in the print setting area are displayed.
Will be printed if displayed
Omitted
Setting display area
The settings selected in the print setting area are displayed.

2 In the print setting area (the top half showing option buttons and check boxes), select which items to print. For each item that you want to print, select **Display** or select the check box. For the items that you do not want to print, select **None** or clear the check box.

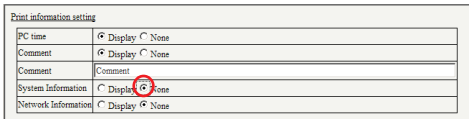

Area for selecting whether to show the header items
Selection area continues below
Area for selecting whether to show the settings

The selections that you make are applied immediately to the window.
In the example shown below, an header item is changed.

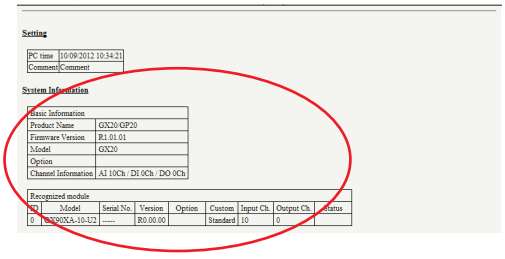
Before changing the setting area
System Information set to Display



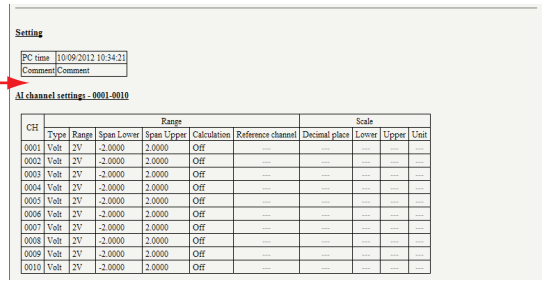
After changing the setting area
System Information set to None



Before changing the display area



After changing the display area



The System Information area is gone, and the AI channel settings have been shifted up.

3 When you have selected all the items that you want to print, click **Print** on the Web browser's **File** menu.
The Web browser's Print dialog box appears.

4 Click **OK**.
The setup data will be printed.

Note

- To preview the print, on the **File** menu, click **Print Preview**.
- Configure the printer settings in accordance with your PC system.

Blank

3.1 Errors and Messages

Message

Code	Message	Description and Corrective Action
M001	Save changes to xxx?	File name confirmation.
M002	Receiving finished.	Reception completed successfully.
M003	Sending finished.	Transmission completed successfully.
M004	Recording started.	The recorder started recording.
M005	Recording stopped.	The recorder stopped recording.
M006	Computing started.	The recorder started computing.
M007	Computing stopped.	The recorder stopped computing.

Warning Messages

Code	Message	Description and Corrective Action
No code	Input value is invalid. It is returned before the change.	An invalid value may have been entered in a setup item. Check the settings below. • Expression • IP address • FTP connection • SMTP or POP3 server password • Password for the security setting operation lock or user registration
W001	Receive settings from connecting hardware.	Reception confirmation. To continue, click **OK**. To cancel, click **Cancel**.
W002	Send settings to connecting hardware. If user level is not “Admin”, some settings can not be set on the device.	Transmission confirmation. To continue, click **OK**. To cancel, click **Cancel**.
W003	Hardware and software configurations don't match. Continue sending data?	Transmission confirmation. To continue, click **OK**. To cancel, click **Cancel**.
W004	System configuration has been changed. The input configuration and data will be initialized. Continue?	If you change the system configuration, the displayed setup data will be initialized. To continue changing, click **OK**. To cancel, click **Cancel**.
W005	Overwrite the file?	Confirmation for overwriting a file with the same name. To continue, click **OK**. To cancel, click **Cancel**.
W006	Start recording.	Recording start confirmation. To continue, click **OK**. To cancel, click **Cancel**.
W007	Stop recording.	Recording stop confirmation. To continue, click **OK**. To cancel, click **Cancel**.
W008	Start computing.	Computing start confirmation. To continue, click **OK**. To cancel, click **Cancel**.
W009	Stop computing.	Computing stop confirmation. To continue, click **OK**. To cancel, click **Cancel**.
W010	Initialize current settings.	Initialization confirmation. To continue, click **OK**. To cancel, click **Cancel**.
W011	Failed to store any settings.	Some of the setup data have not been applied to the recorder due to differences in the system configuration. Check the system settings.
W012	Number of channels is over the maximum value.	The module configuration setting exceeds the maximum number of channels. Check the modules and the maximum number of channels, and reconfigure.
W013	Failed to set any settings.	Some of the setup data have not been applied to the software. Check the system configuration.

Error Messages

Code	Message	Description and Corrective Action
E001	Communication error occurred.	Communication error occurred with the recorder. Check communication parameters, network cables, and settings on the recorder.
E002	Failed to save the file.	Failed to save the file. Check the folder and file properties.
E003	Failed to read the file.	Failed to open the file. Check the file name.
E004	Internet Explorer is not installed.	Internet Explorer is not installed. Install Internet Explorer.
E005	Now recording. Can't store settings.	Settings cannot be send while the recorder is recording. Send them after the recorder stops recording.
E006	Now computing. Can't store settings.	Settings cannot be send while the recorder is computing. Send them after the recorder stops computing.
E007	The file is read-only.	Attempting to save to a read-only file. Make the file writable, or save to a different file.
E008	Access to the file is denied.	Check the access privileges to the file. Check whether the file system limit has been exceeded.
E009	The disk is full.	Check the free space in the save destination.
E010	The directory is full.	Check the number of files in the save destination.
E011	The file is invalid.	A file format error.
E012	Sharing violation occurred.	The file is already opened in another application. Close the file.
E013	Error occurred.	An error other than those above (001 to 012) occurred.
E014	The directory does not exist.	The directory may have been deleted.
E015	PDF file reader is not installed.	Install Adobe Reader.
E016	The directory already exists.	Check whether the path and folder name have been specified correctly.
E017	Bad file path is specified.	The file path length has exceeded the limit (256 characters), or an invalid character has been used. Shorten the file path, or correct the file name.
E018	Failed to open program files.	This error occurs when a browser other than the browser started by this software was used to access the software, or Internet Explorer was refreshed consecutively. Close all browsers, and restart Hardware Configurator.
E019	Please delete temporary internet files from the browser, close the browser and restart the application.	This error occurs when temporary internet files affect the software. Delete temporary files in Internet Explorer, then restart Hardware Configurator.
E020	The user name or the password is wrong.	Enter a valid user name and password in the communication condition dialog box. For example, this message appears when the user logged in changes his or her own user information and sends it or when the user sends setup data that changes the “Security setting > basic settings > communication” setting from OFF to Login. In these cases, resend the command with the new valid user name and password.
E021	This function is not possible at this time.	This message appears when you attempt to perform an operation that cannot be executed from the menu.